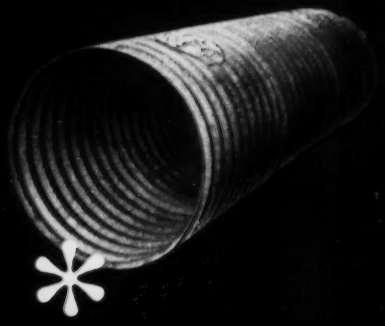
ENGINEERING NEWS-RECORD

A McGRAW-HILL PUBLICATION



Take drainage installations in **full stride**

Making joint connections in sewers, culverts and other drainage structures can be expensive. Obviously, fewer joints reduce costs, save installation time and labor. This is one of the prime advantages of Armco Corrugated Metal Pipe. It is available in 20-foot lengths, or even longer, depending upon the limitations of hauling and handling.

Armco Corrugated Metal Pipe has been proved in more than 40 years of underground service. During this time Armco engineers have provided improved protection against erosion and corrosion. Today there is a sturdy, efficient and economical Armco Pipe to meet every drainage condition—plain galvanized, ASBESTOS-BONDED, or PAVED-INVERT.

This is only one of the many Armco-developed products for use in drainage and construction fields. Armco Perforated Pipe, Pipe-Arch, Steel Buildings and other products have gained the approval and confidence of engineers and contractors everywhere.

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ARMCO

ARMCO DRAINAGE & METAL PRODUCTS, INC.

P&H Diesel Engines

(2-CYCLE)

Can your diesels tie this for Turbulence?

See those intake ports? . . . how they're machined at a compound angle? That's the basis of P&H's exclusive "Whirl-air" intake. As the piston clears these ports on its down stroke, air rushes through the ports, developing a whirlwind within the cylinder that picks up atomized fuel for the effective 2-cycle expansion stroke.

Here's turbulence at its best. More complete atomization — more complete combustion — more thorough scavenging of burned gases. More power!

P&H offers you the only 2-cycle diesels with this outstanding feature. Yet, it's only one of many advantages you'll find in this advanced P&H line . . . with 1, 2, 3, 4 and 6-cylinder models — from 20 to 138 h.p.

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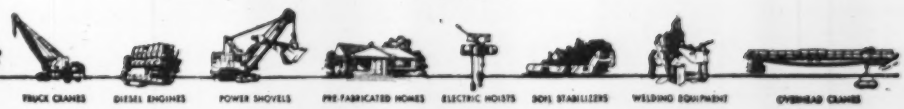
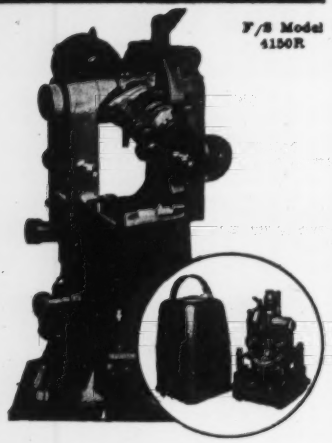
HARNISCHFEGER CORPORATION
CRYSTAL LAKE, ILLINOIS

the P&H *Line*



F/S OPTICAL TRANSIT



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F/S Optical Planimeter

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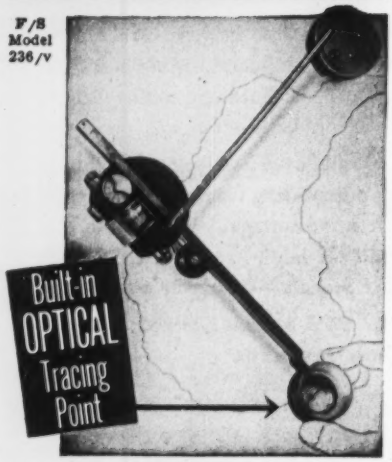

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ENGINEERING NEWS-RECORD

ABP Member ABC

Volume 150 January 29, 1953 No. 5

WALDO G. BOWMAN
Editor

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For the people whose business is ROCK!

The pictures on this page are typical of Northwest Shovels that are repeat orders in the hands of people whose business is Rock. Each one of these companies has tested Northwest machines continuously in their own rock. They have proved Northwest as a Rock Shovel. They have learned the value of the Northwest Dual Independent Crowd—the crowd that utilizes force most other shovels waste. They have found out what it means to have ease of operation without the complications of pumps, valves and other delicate mechanisms. They have seen the smoother operation and freedom from jerks and grabs characteristic of Northwest Uniform Pressure Swing Clutches. They know what the Cushion Clutch means with its ability to eliminate shock overloads before those overloads can do damage to the machinery. In short, they have proved Northwest advantages to be money makers worth having.

Now is the time to plan to be a Northwest Owner. Now is the time to check into and learn about Northwest. Why not talk to a Northwest Man and get the whole story?

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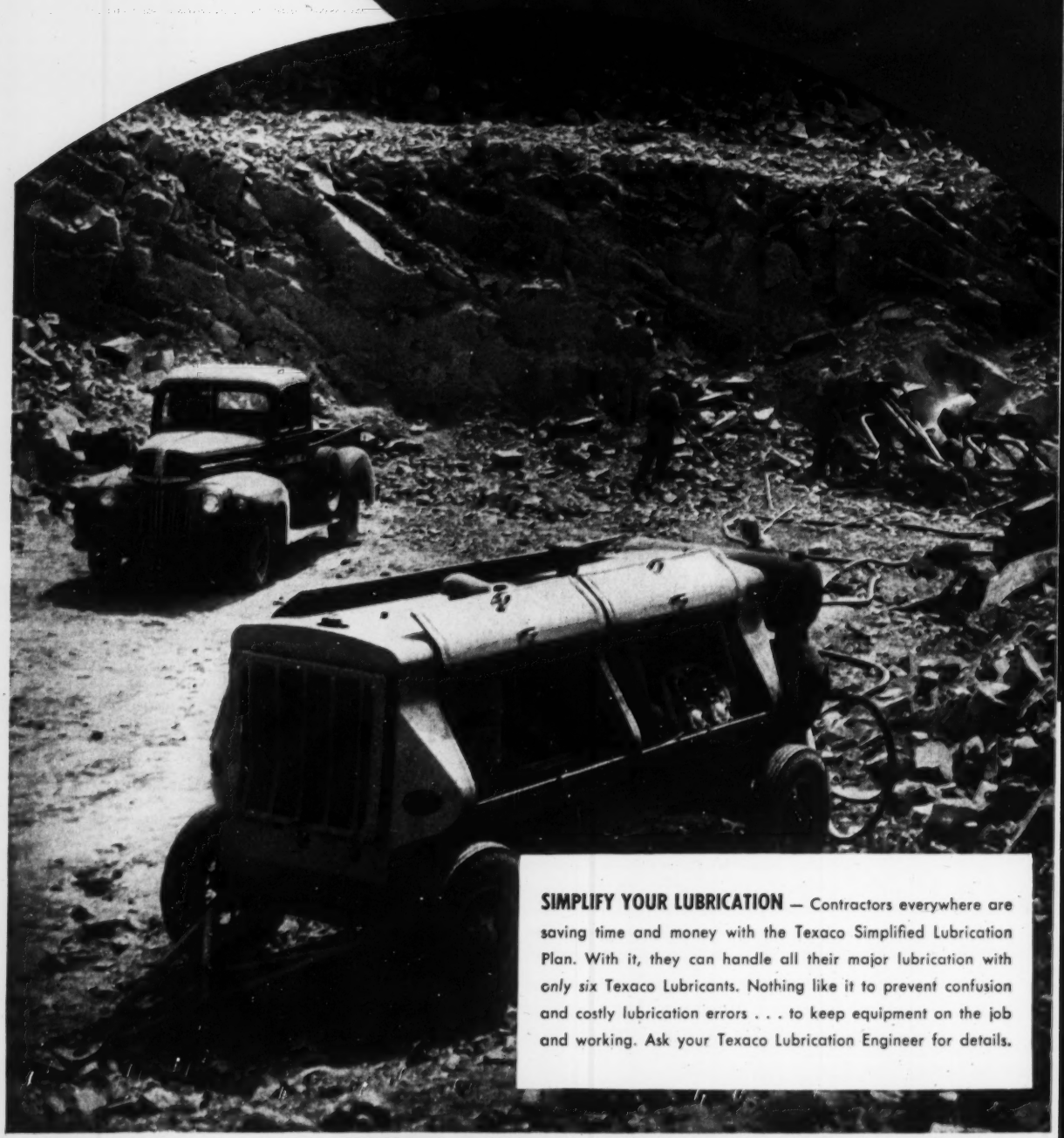


SIMPLIFY YOUR LUBRICATION — Contractors everywhere are saving time and money with the Texaco Simplified Lubrication Plan. With it, they can handle all their major lubrication with *only six* Texaco Lubricants. Nothing like it to prevent confusion and costly lubrication errors . . . to keep equipment on the job and working. Ask your Texaco Lubrication Engineer for details.

TUNE IN . . . TEXACO STAR THEATER starring MILTON BERLE, on television Tuesday nights. METROPOLITAN OPERA radio broadcasts Saturday afternoons.

TEXACO

TEXACO

FULL PRESSURE under ALL conditions...

Use the recommended Texaco air compressor oil

You can keep full air pressure at your drills only by keeping your compressors running cleanly and efficiently. Here you must depend on effective lubrication . . . and because *no one oil* can assure this under *all* operating conditions, there is a complete line of Texaco air compressor oils . . . one exactly right for *your* conditions.

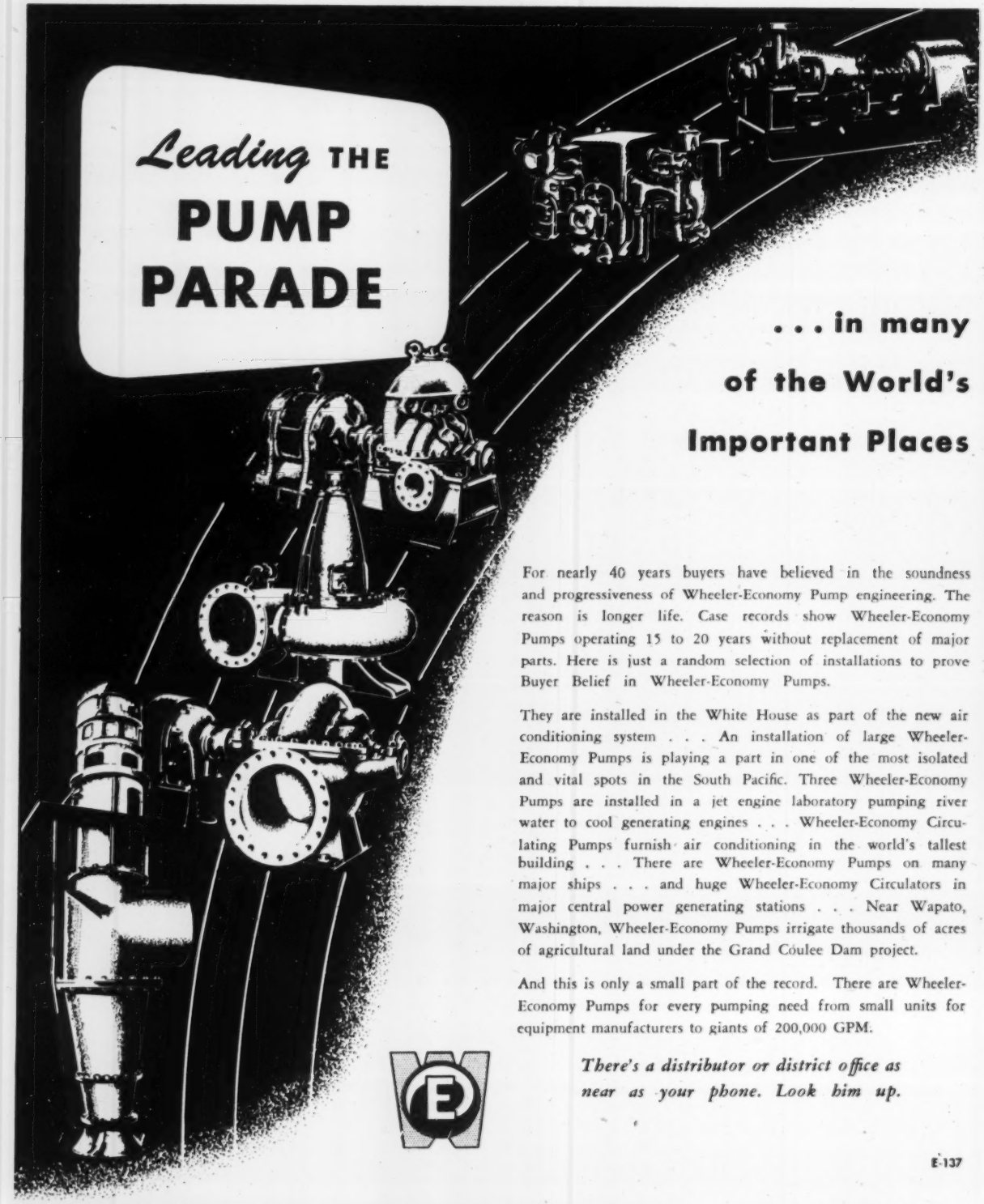
For example, a Texaco *straight mineral* air compressor oil is your best bet for normal conditions. If "wet cylinders" are causing excessive wear, you should use a Texaco *compounded* air compressor oil. If rusting is a problem, you can overcome it by using a Texaco *rust-inhibited* air compressor oil.

FOR YOUR ROCK DRILLS use *Texaco Rock Drill Lubricant EP.* You get superior lubrication plus longer drill life and reduced maintenance costs because of its "extreme pressure" properties. In addition, it protects against rust whether drills are running or idle.

A Texaco Lubrication Engineer will gladly help you select the proper lubricants to get top performance from all your equipment. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

Lubricants and Fuels

FOR ALL CONTRACTORS' EQUIPMENT



Leading THE PUMP PARADE

. . . in many of the World's Important Places

For nearly 40 years buyers have believed in the soundness and progressiveness of Wheeler-Economy Pump engineering. The reason is longer life. Case records show Wheeler-Economy Pumps operating 15 to 20 years without replacement of major parts. Here is just a random selection of installations to prove Buyer Belief in Wheeler-Economy Pumps.

They are installed in the White House as part of the new air conditioning system . . . An installation of large Wheeler-Economy Pumps is playing a part in one of the most isolated and vital spots in the South Pacific. Three Wheeler-Economy Pumps are installed in a jet engine laboratory pumping river water to cool generating engines . . . Wheeler-Economy Circulating Pumps furnish air conditioning in the world's tallest building . . . There are Wheeler-Economy Pumps on many major ships . . . and huge Wheeler-Economy Circulators in major central power generating stations . . . Near Wapato, Washington, Wheeler-Economy Pumps irrigate thousands of acres of agricultural land under the Grand Coulee Dam project.

And this is only a small part of the record. There are Wheeler-Economy Pumps for every pumping need from small units for equipment manufacturers to giants of 200,000 GPM.

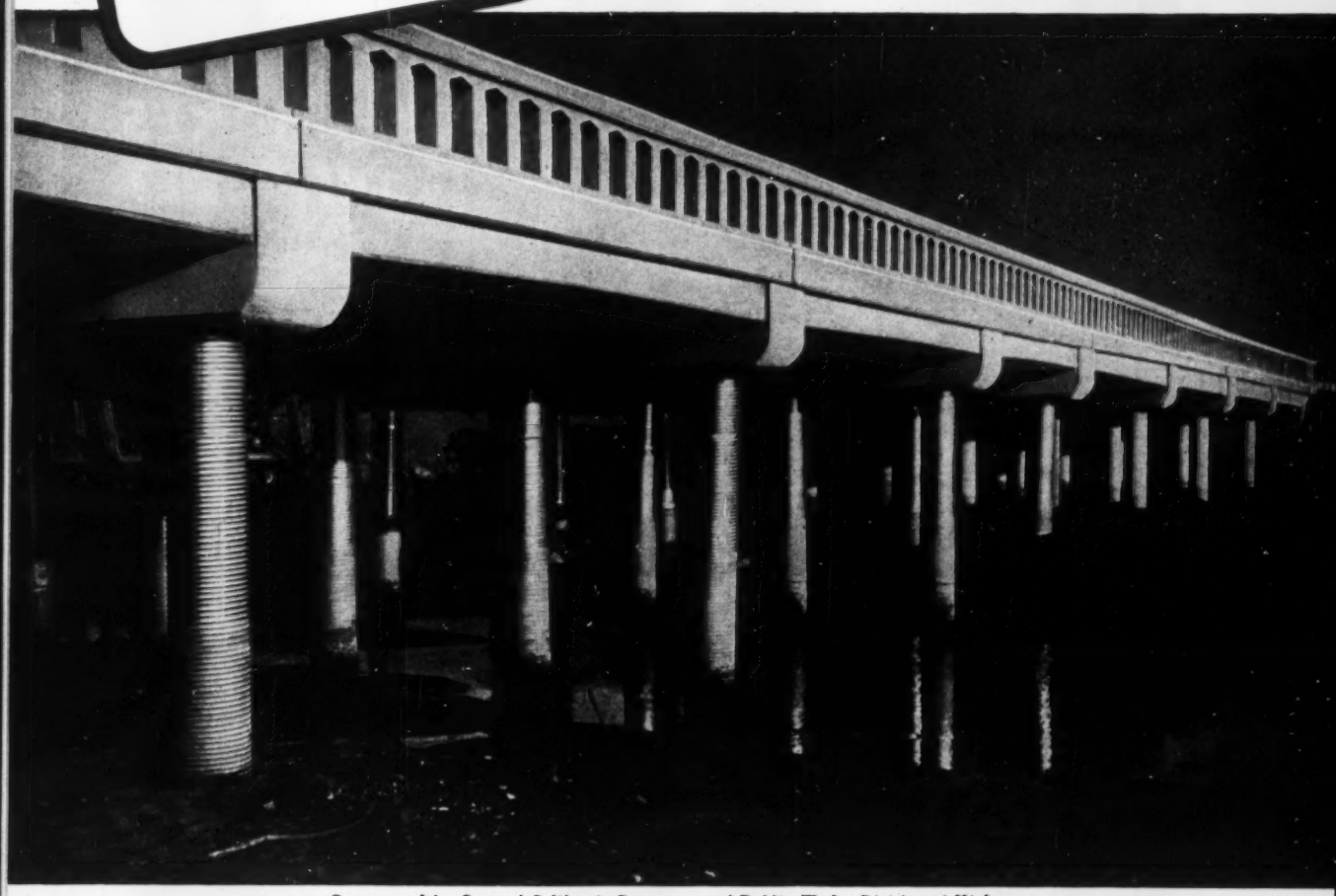
There's a distributor or district office as near as your phone. Look him up.

E-137

WHEELER-ECONOMY PUMPS

ECONOMY PUMPS, INC. · DIVISION OF C. H. WHEELER MANUFACTURING CO.
19TH AND LEHIGH PHILADELPHIA 32 PA.

completed ...another bridge on RAYMOND piles



Constructed for State of California Department of Public Works, Division of Highways.

spanning the South Channel Sweetwater River between National City and Chula Vista, California is this 332-foot long highway bridge supported by Raymond piles. It has a 28-foot wide roadway and is of reinforced concrete construction with concrete caps resting directly on the Raymond piles—another example of the important role Raymond is playing in the constant development of the highways of America.

THE SCOPE OF RAYMOND'S ACTIVITIES . . .

Foundation Construction . . . Harbor and Waterfront Improvements . . . Soil Investigations . . . In-Place Pipe Lining . . . Specialized Construction

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SUPERIOR

CONTINUOUS THREADED COIL RODS . . .

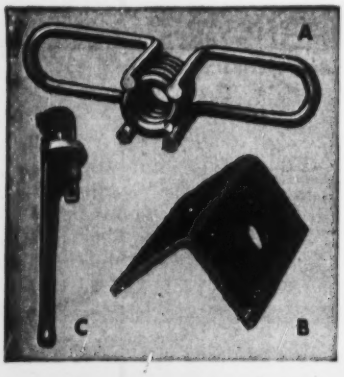
. . . MAKES DIFFICULT TYING JOBS *Easy* . . . . .

Superior Continuous Threaded Coil Rods, with or without Coil Wing Nuts and Corner Brackets, are a valuable supplement to Superior Coil Ties and standard working parts when job conditions are unusual or difficult.

In three typical applications, shown at the right, these Continuous Threaded Rods are used; (1) to tie form corners; (2) as an anchor rod tie down and as coil bolts; and (3) as a coupling for two coil ties providing an adjustable form tie.

Available in ½", ¾", and 1" diameters and in any length up to 0 ft., Superior Continuous Threaded Coil Rods in quantities can be ut to length on the job with a heavy-duty hand Coil Rod Cutter.

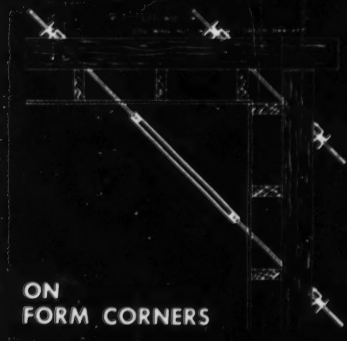
Superior Continuous Threaded Coil Rods are the answer to unusual or difficult tying problems. When you use Superior you are assured of the *best* in design, material, and workmanship.



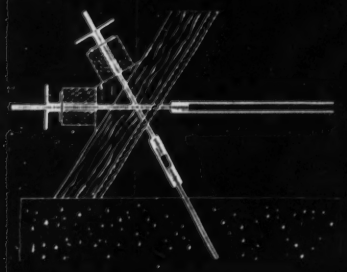
A-COIL WING NUTS
Coarse helix coils form the threads. Easily applied and removed from rod. Develops maximum capacity of rods.

B-CORNER BRACKET
An *exclusive* Superior feature. Provides simple, efficient method of tying form corners and bulkheads.

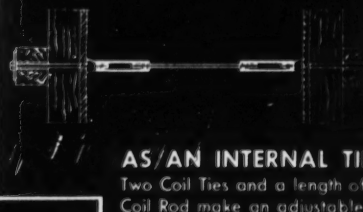
C-SPECIAL COIL ROD WRENCH
Heavy-duty Stillson type wrench with special jaws for gripping and turning Coil Rods with least damage to threads.



ON FORM CORNERS



FOR ANCHORAGE



AS AN INTERNAL TIE
Two Coil Ties and a length of Coil Rod make an adjustable form tie and spreader.

SUPERIOR CONCRETE ACCESSORIES, INC.
4110 Wrightwood Avenue, Chicago 39, Illinois
New York Office 1775 Broadway, New York 19, N. Y.
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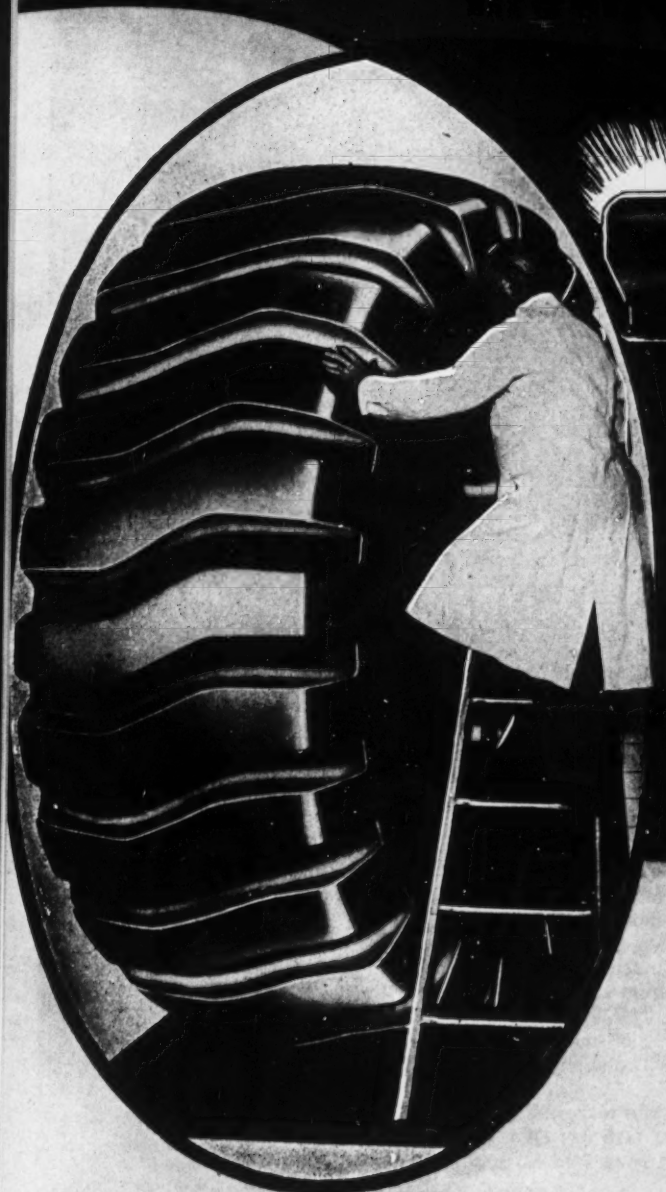
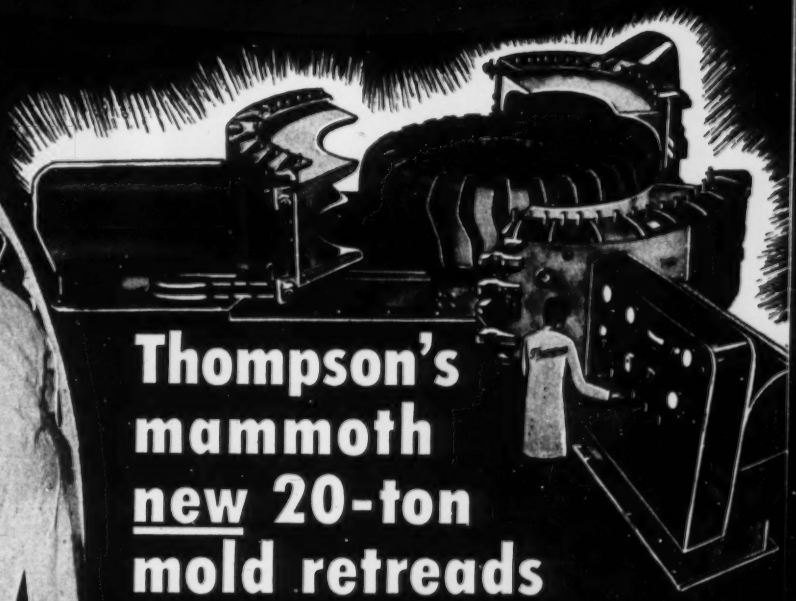
REQUEST A COPY OF OUR NEW CATALOG 500 . . .
It contains a valuable table for spacing studs, wales, and form ties.

WORLD'S LARGEST RETREADING MOLD





Thompson's mammoth new 20-ton mold retreads off-the-road tires of 8 feet diameter and up to 3 feet in width!

This huge mold capable of retreading tires of sizes up to 30.00 x 33 is the latest addition to the Thompson battery of molds for retreading construction tires of every size. Once again, Thompson anticipates the changing needs in the construction field and leads the industry in installing appropriate equipment. This new mold produces the larger sizes of the newly-designed Thompson *Special Purpose* Retreads preferred for longest wear and greatest traction.

Contact Thompson for prompt and efficient service.

Retreading quality of the standard required by the world's leading airlines is a Thompson exclusive in the retreading of off-the-road tires.

THOMPSON *Special Purpose* RETREADS

THOMPSON *Aircraft Tire* CORPORATION

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"John, this building of mine holds a cost-cutting *Tip-Off* from ONE BUSINESSMAN TO ANOTHER"

"What is it?" asked John, a prominent appliance manufacturer.

The contractor answered, *"Simply this: don't take your fasteners for granted!*

"An RB&W man showed me how a switch in fasteners could help me make field connections much more economically.

"He suggested switching from rivets to high strength bolts. They cost more than rivets initially, but the assembled cost is much lower. My men work faster than with rivets. The building goes up faster."

You, too, can find a cost-cutting lesson from this story, whether you're in construction* or any other industry.

MORAL: Look to your fasteners for an often overlooked opportunity to reduce costs, and strengthen your competitive position. New inventions, like RB&W's SPIN-LOCK Screw, may prove more efficient than the fasteners you're now using. Or you may save by the stepped-up production you get from using the finest fasteners . . . RB&W bolts, screws, nuts and rivets of uniform accuracy, dependability and physical properties.

Let RB&W help you make the most efficient use of fasteners on your assembly line. Address RB&W at Port Chester.

RB&W—The Complete Quality line. Plants: Port Chester, N. Y., Coraopolis, Pa., Rock Falls, Ill., Los Angeles, Calif. Additional sales offices: Philadelphia, Pittsburgh, Detroit, Chicago, Dallas, Oakland. Sales agents: Portland, Seattle. Distributors from coast to coast.

RUSSELL, BURDSALL & WARD BOLT AND NUT COMPANY

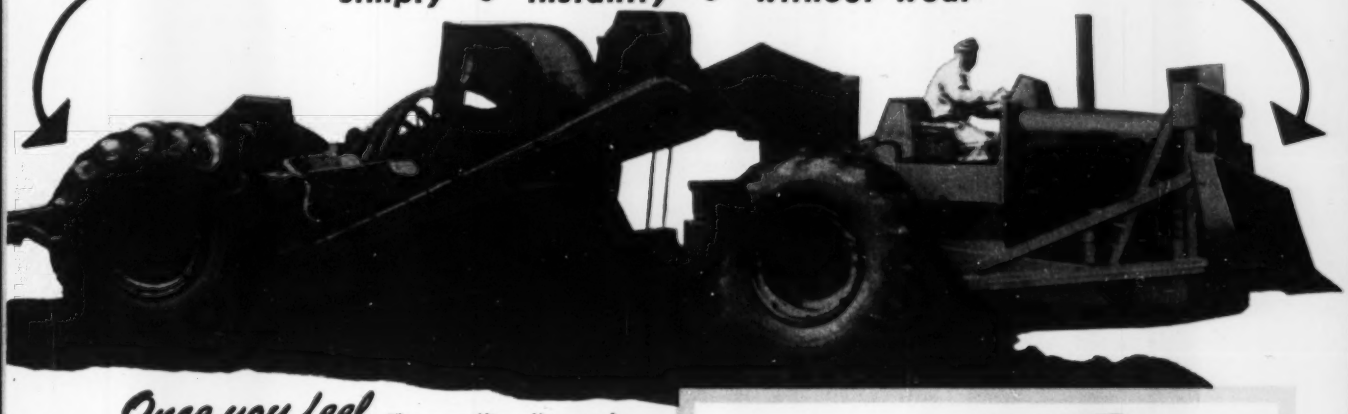
*If you're interested in construction, write RB&W at Port Chester for a free reprint of the recent article, "No More Riveting."

RB&W 107 YEARS MAKING STRONG THE THINGS THAT MAKE AMERICA STRONG

Electric Controls mean profit for you

Power from here to here

simply • instantly • without wear



Once you feel Tournapull's split-second response, you'll *know* why LeTourneau electric control has a reputation for being the fastest, most practical control system ever built. By flicking a fingertip switch, operator steers . . . shifts . . . raises or lowers scraper bowl or apron . . . moves tailgate . . . controls dozer blade. No longer does he fight long levers or clumsy steering wheels. Simple dashboard switches make every operation easy, effortless.

Easy to maintain

Operating records prove these electric controls not only are fast, but need *far less* upkeep than either hydraulic or mechanical systems. The reason: motors work at point of action . . . do away with long cables, hydraulic lines, control clutches, complicated transmission linkages. Power is transmitted instantly along heavy flexible electric cable. The motors themselves have *no wearing parts* other than bearings. They work at top efficiency in rain, dust, heat and cold, where hydraulic or mechanical systems often fail.

The a-c generator that supplies the power is equally simple. Coupled direct to the engine, it has no chain, belt, or gear drive to need attention . . . no commutator to foul up and require cleaning or turning down. The LeTourneau generator is actually simpler and requires less maintenance than that which supplies current for lights and ignition on your car, truck or tractor.

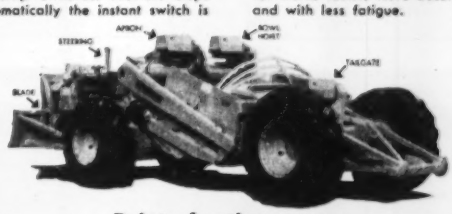
Get all the facts

Important as it is, electric control is *only one* of the places where Tournapull simplifies your maintenance problems. Rubber tires, for example, give you 2 to 3 times the speed of tracks —yet eliminate about 500 wearing parts of the track assembly. Tournapulls need no springs . . . have no frame or sub-frame . . . no long drive-shaft. Daily check of oil level and lubrication can be done in 15 minutes. General lubrication, needed only once every 10 shifts, can be handled in 2 hours.

Compare this with your present rigs. See Tournapull in action, judge for yourself the extra profits you can make. Just ask your LeTourneau Distributor for a demonstration on your job.

Instant fingertip control

To steer, load, spread or doze, operator just flicks one of these fingertip switches. Action stops automatically the instant switch is released or limit of travel reached. Because control is so easy, operator works faster, more accurately, and with less fatigue.



Point-of-action power

Individual motors put power where it's needed. Complicated mechanical or hydraulic systems are eliminated . . . cable requirements and reeving time reduced. Entire electrical system is simple to understand . . . as reliable as your refrigerator or other electrical home appliance.

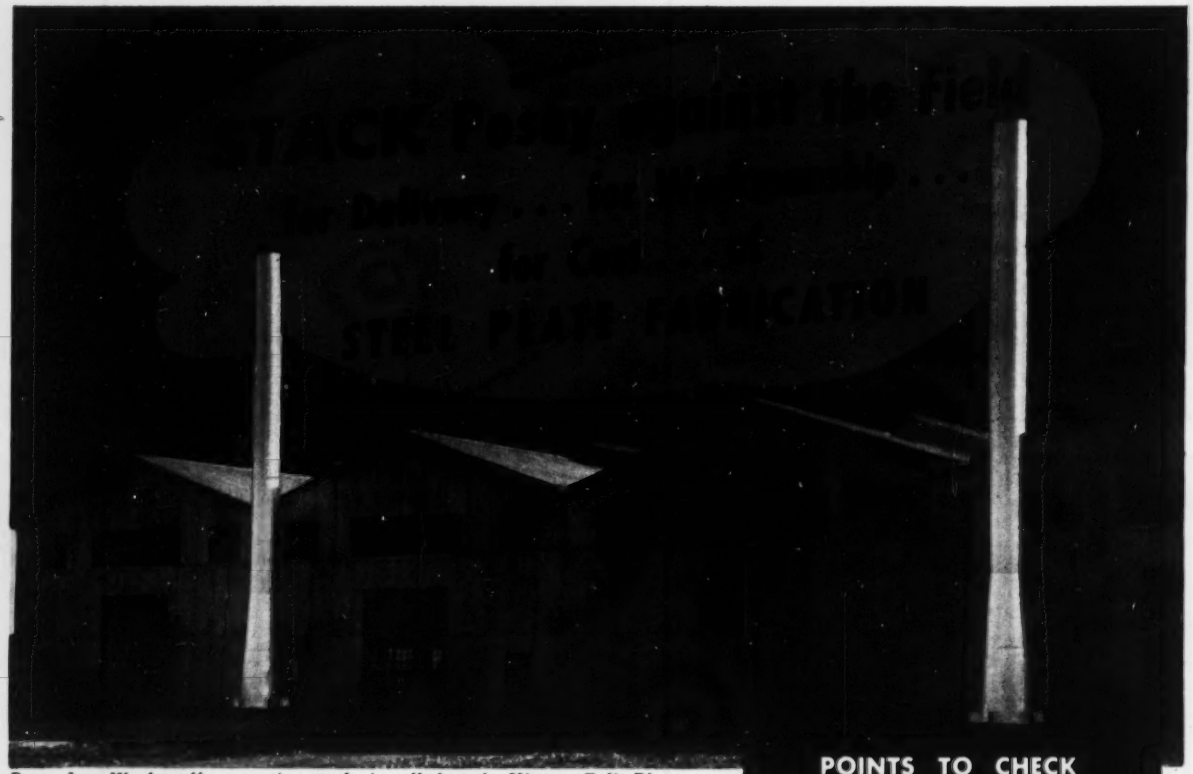
Top performance in any weather

Electric motor dependability shows up best in tough going. Rain or snow have no effect — motors can operate even when under water. No precautions needed for freezing weather. Motors have no brushes or commutator . . . no wearing parts other than bearings.

Tournapull—Trademark Reg. U. S. Pat. Off. M-178-Gb

R. G. LeTOURNEAU, INC.

Peoria, Illinois



Posey Iron Works self supporting stacks installed at the Niagara Falls Plant of the International Graphite & Electrode Division of Speer Carbon Co. Height: 50 ft. Diameter: 3 ft.

Posey Iron is really "stackin' 'em up" for industries large and small. Stack buyers find that stacks by Posey Iron are sound in workmanship . . . competitive in cost . . . and delivered on date of promise.

Whether for stacks . . . tanks . . . pressure vessels . . . pipe . . . or digesters . . . steel plate fabrication by Posey Iron meets all standard codes including **ASME; API-ASME; API.**

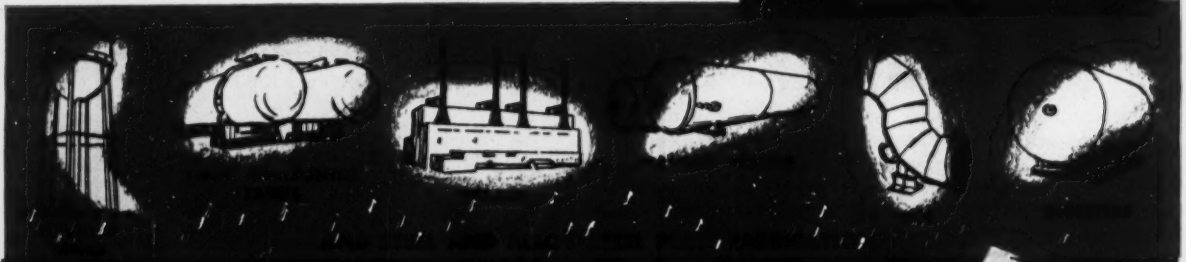
Posey Iron does the complete job . . . design . . . fabrication . . . erection. 16½ acres of plant under roof promote smooth flow of production. Shipping is facilitated by favorable location in a key rail and road center — Lancaster, Pa.

Stack Posey Iron against the field on your next stack job. Our estimate puts you under no obligation.

POINTS TO CHECK BEFORE YOU BUY STEEL PLATE CONSTRUCTION

1. Has supplier adequate plant to produce job without costly fumbling and delays?
2. Will supplier assign to your job designers and executives with experience in your field?
3. Have you checked with business acquaintances as to the supplier's reputation for sound workmanship?

Posey Iron WELCOMES requests for further information.



POSEY IRON WORKS, INC.

Steel Plate Division

LANCASTER, PA.

New York Office: Graybar Building

ESTABLISHED SINCE 1910

DIVISIONS
Brick Machinery
Foundry
Industrial Heating
Ironers
Shipbuilding
Steel Plate

READER COMMENT

Tunnel ventilation

Sir: In your article on San Francisco's new Broadway Tunnel (ENR Dec. 25, p. 48), the statement about the automatically controlled ventilation fans is not exactly correct. The fans start when carbon monoxide content exceeds 1 part in 10,000. They are going full blast when content reaches 2.5 parts in 10,000. Finally, the tunnel is closed to traffic when carbon monoxide content exceeds 4 parts in 10,000.

RALPH G. WADSWORTH
City Engineer
City & County of San Francisco

Experience with riveting

Sir: The greatly interesting article, "How much stress can a rivet take?" (ENR Dec. 4, p. 40) prompts me to call attention to some lessons I have learned about riveting from tests and more than 50 years of experience on building and bridge construction.

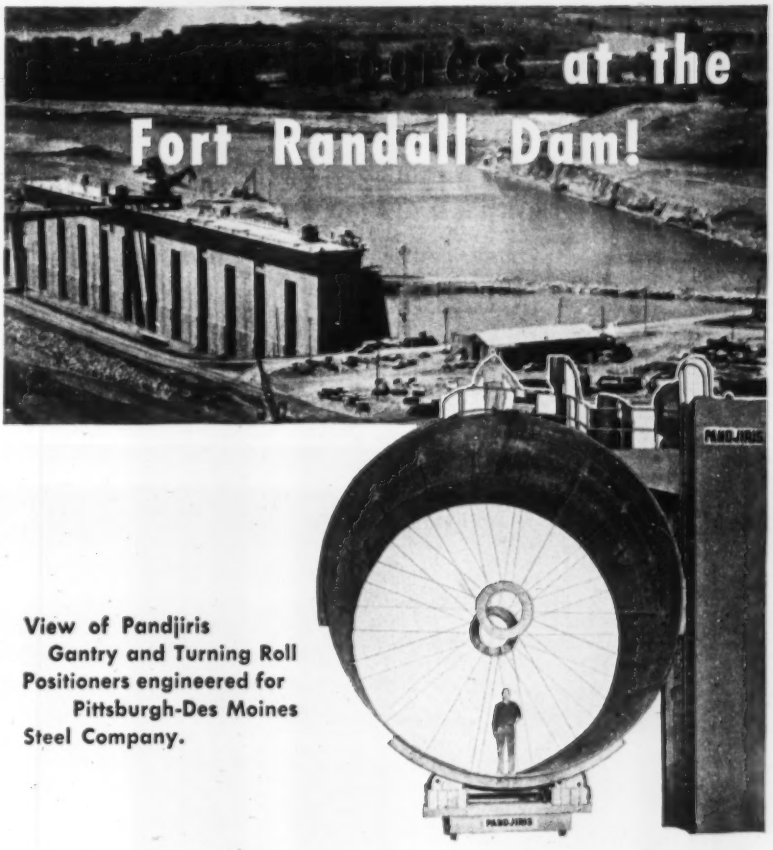
The prime factor in preparing a splice-plate joint for riveting is to have the connecting bolts tightened to refusal. There should be no gap whatsoever between the plates.

The next important consideration is to have the bolts placed in alternate holes and left there until the rivets have been driven in the open holes. This would give the splice plates a chance to cool, minimizing the contraction that makes loose rivets possible.

With tight rivets, properly driven with the right size snaps forming concentric heads, there would be no danger of moisture getting under the rivet head and penetrating to the rivet stock. Such moisture generally causes corrosion and improper functioning of rivets.

Another important factor is the length over which a rivet fills its hole. I have seen tests in which 1-in. dia rivets, heated to the proper temperature, were driven through six plies of 1-in. thick plates, which had been bolted together. After cooling, the riveted specimen was cut through along the center line of each rivet, to learn to what extent the hole was filled. In no case was this distance more than 2½ in. The reason for this was that after a few seconds of driving, the rivet quickly cooled off and resisted further plugging.

Still another factor is the loss of heat because of the distance a rivet is thrown after leaving the fire. The resulting drop in temperature, es-



View of Pandjiris Gantry and Turning Roll Positioners engineered for Pittsburgh-Des Moines Steel Company.

due to *Weldmore* Equipment . . .

revolutionary strides have been accomplished in welding operations at the Fort Randall Dam at Pickstown, South Dakota . . . for instance, the Pandjiris Weldmore Gantry and Turning Roll Positioners, especially developed for Pittsburgh-Des Moines Steel Company. Penstocks in diameter to 24½ feet, and weights up to 100,000 lbs. are automatically positioned for both longitudinal and circumferential welds . . . thus providing high speed, automatic submerged melt welding, 60 to 100 times faster than hand electrodes.

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READER COMMENT

pecially when more time is lost before driving, ultimately would affect the shear and tensile strengths.

Because of the wide variety of materials of which rivets are made and the many types of rivets, it is difficult to establish from laboratory tests of a few selected rivets definite conclusions embracing all rivets. More facts are needed; perhaps further discussion will serve to bring them out.

RICHARD TENCH
Robert W. Hunt Co.
San Francisco, Calif.

CALENDAR

Associated Equipment Distributors, annual convention, Conrad Hilton Hotel, Chicago, Ill., Feb. 1-5.

Mason Contractors Association of America, Sherman Hotel, Chicago, Ill., Feb. 1-4.

California Street and Highway Conference, University of California, Berkeley, Feb. 4-6. California Municipal Refuse Collection and Disposal Conference, University of California, Berkeley, Feb. 5-6.

American Road Builders Assn., Hotel Statler, Boston, Mass., Feb. 9-11.

American Concrete Institute, annual convention, Statler Hotel, Boston, Mass., Feb. 17-19.

Interamerican Municipalities Congress, Montevideo, Uruguay, Feb. 20-28.

Ohio Water Clinic, Ohio State University, Columbus, Feb. 19-20.

Illinois Conference on Highway Engineering, Urbana, Feb. 24-26.

Industry Conference on Air Pollution Abatement, Hotel Statler, Detroit, Mich., Feb. 26-27.

American Concrete Pipe Association, annual convention, Baker Hotel, Dallas, Tex., Feb. 26-28.

American Concrete Pressure Pipe Assn., annual convention, Baker Hotel, Dallas, Tex., Feb. 25.

American Concrete Agricultural Pipe Assn., annual convention, Baker Hotel, Dallas, Tex., Feb. 26.

Association of State Highway Officials of the North Atlantic States, Hotel Traymore, Atlantic City, N. J., Mar. 3-6.

Ohio Society of Professional Engineers, annual meeting, Nell House, Columbus, Mar. 5-7.

Symposium on Air Pollution Control, Wagner College, Staten Island, N. Y. City, Mar. 7.

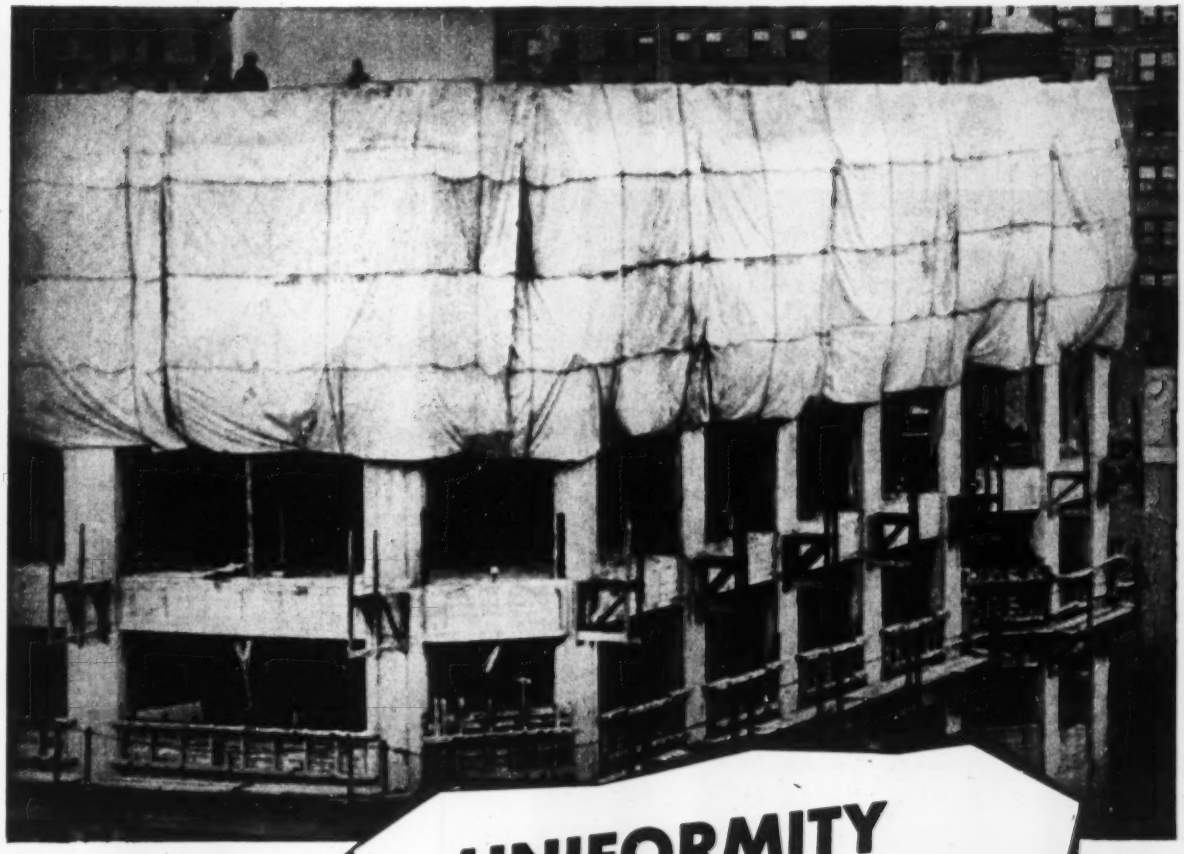
N. J. Sewage and Industrial Wastes Assn., Hotel Traymore, Atlantic City, N. J., Mar. 11-13.

N. Y. State Association of Highway Engineers, Hotel Statler, Buffalo, N. Y., Mar. 17-20.

American Railway Engineering Association, annual meeting, Palmer House, Chicago, Mar. 17-19.

Southern Municipal and Industrial Wastes Conference, University of North Carolina, Chapel Hill, Mar. 19-20.

Third Midwestern Conference on Fluid Mechanics, University of Minnesota, Minneapolis, Mar. 23-25.



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Federal debt—How much of a problem?

Federal debt reached $267.4 billion at the end of 1952. The debt has grown through depression and war to more than 11 times its size in 1930. Interest on the debt now costs the nation about $6.5 billion every year.

These are big figures. Yet the direct burden of debt on the economy is not intense; interest payments are less than 10% of the national budget, and there is no prospect that the nation will be unable to meet these payments at any time in the future.

Nevertheless, the national debt creates some serious problems for the economy. Wartime federal borrowing contributed directly to the inflation during the period of the past ten years. And the manner in which the debt has been managed in recent years is another factor that has stimulated the rise in the national price level.

The government has borrowed heavily from the banks—more than $90 billion of the $215-billion increase in federal debt during the war was obtained from the banks. And borrowing from banks increases the amount of money circulating, since the banks loan money that might otherwise rest idle in their vaults. Other lenders—such as individuals—make loans with money that they might otherwise have spent.

The government has also added to inflationary pressures by supporting the market for its own bonds. Until recently, the Federal Reserve System bought government bonds whenever the price threatened to drop in the market. So any bank that wanted more reserves—to increase private lending—could get them by selling government bonds. Thus banks were free to make almost all the inflationary private loans they wanted—and the Federal Reserve, in effect, supplied the cash on which these inflationary loans were based.

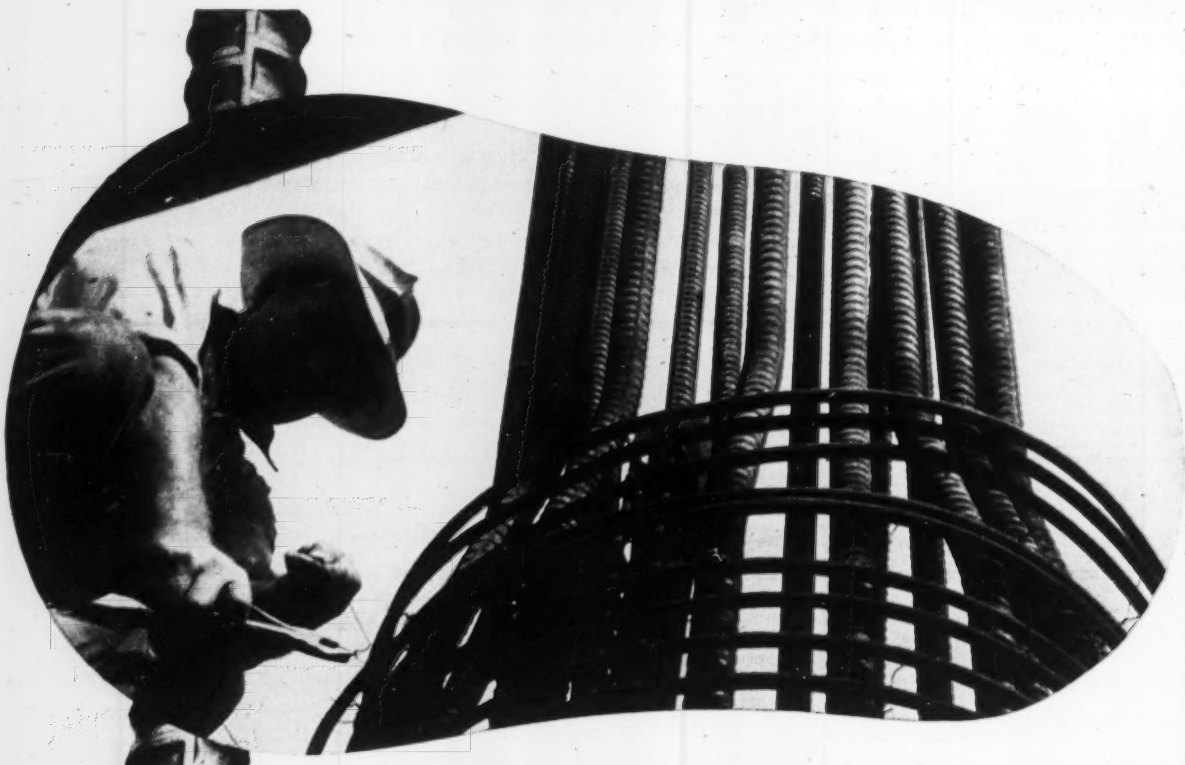
The practice of supporting the government bond market points up the greatest danger of government debt. Governments, unlike private individuals, can always pay their debts by printing more money. The United States government has not gone in for this practice, except indirectly, through the Federal Reserve. But the threat always exists.

The nature of government debt plays a big part in its inflationary potential. A very large part of it is short-term debt—about $213 billion—may have to be "turned over" in the next five years. Long-term debt is much easier to deal with, since only a small part of it comes due in any one year. The need to support the government bond market would be much less demanding if a smaller percentage of the debt had to be repaid and then reborrowed each year.

The threat of inflation through government refinancing operations is less of a problem today than in earlier postwar years. Since early in 1951 the federal reserve has placed less emphasis on the bond market and allowed bond prices to fall a considerable distance before stepping in. This policy is sure to be continued under the new Republican administration, and it vastly weakens the inflationary potential of bank holdings of government bonds.

In addition, Republicans show every sign of planning to change the basic debt structure that has made Federal Reserve support seem necessary. They are expected to fund part of the floating—short-term—debt into long-term issues. If they can reduce the amount of borrowing the treasury has to do each year, the need to support the bond market will be severely reduced.

These developments promise to make the federal debt a less powerful engine of inflation over the next few years. At the same time, they will create some new problems for private borrowers. Putting the debt in long-term issues will force the government to pay higher rates of interest. And, as the government pays more for borrowed money, private borrowers will also have to pay more for their money. Large-scale funding operations could raise rates on state and municipal bonds, and perhaps mortgages, by significant amounts (ENR Jan. 15, p. 17).



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• **Predictions**—With the new administration barely set in its new offices, the week was still a good one for predictions.

Here were some of them:

Although Charles P. Taft, brother of the Senator, is being promoted by people with influence for either administrator of the Housing and Home Finance Agency or chairman of the Civil Service Commission—he doesn't want the jobs. Looking for something bigger, say the experts.

President Eisenhower will be urged to appoint a five-member commission to coordinate flood control and irrigation work in the Missouri River Basin. Truman's study group will make the recommendation as a majority opinion. A minority, however, urged a state-compact approach to the problem would be the best method.

The regrouping of Agriculture Department activities into four divisions—first major action of Secretary Ezra Taft Benson—will have no effect on the functions and organization of the Forest Service or Soil Conservation Service. Both will carry on their construction programs as before, although officially they are grouped under the new research, extension and land-use group in the new departmental arrangement.

• **Money rights**—The action in a U. S. District Court in California concerned water rights for the Navy's huge Pendleton Marine Base—but in Congress the action concerned money rights.

California's Rep. Yorty accused the Navy of using its funds illegally to continue the lawsuit—brought against numerous property owners to establish water rights in the Santa Margarita River which the U. S. government says it acquired, along with the Camp Pendleton property, in 1943 (ENR Nov. 6, 1952, p. 19). Yorty pointed to a ruling from the comptroller general last August that the Navy couldn't legally use its funds for prosecution of the case.

• **Meeting postponed**—That Citizen's Conference on Natural Resources Policy—originally slated to be held March 25-27 in Washington to discuss long-range U. S. conservation policies, has been called off until next fall. Principal topic for discussion was to have been the controversal Paley report (ENR June 26, 1952, p. 21) on the long-range materials outlook.

About 1,000 industrial, farm, labor and education leaders were to be invited by the White House.

Reason for postponement: a charge by the U. S. Chamber of Commerce that the conference would be run exclusively by New Dealers and professional conservationists, leaving businessmen out in the cold. The new administration wants time to study that aspect before sending out invitations.

• **Seaway snag still there**—One possible block to the quick determination of who will build the U. S. half of the St. Lawrence Seaway was still very much in the picture: the application of the Public Power and Water Corporation of New Jersey to build and operate power facilities.

In hearings now going on before the Federal Power Commission, PPWC's application has been piled on top of applications by the New York (state) Power Authority to do the same job.

Pundits are betting that FPC will dismiss the application, but the commission gave the corporation until Jan. 22 to file a reply. That reply (which would include evidence of financial ability) wasn't received on the deadline date, but was being circulated last week among interested parties. FPC indicated it would accept the reply, when received.

Further complicating the matter was Canada's flat declaration, several weeks ago, that it wanted no partnership with private corporations in developing the seaway power.

GREATER ECONOMY IN ARCHITECTURAL CONCRETE!

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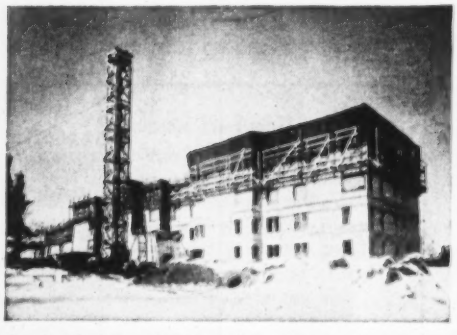

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Tight rein for U. S. construction

Naming Congress committee chairmen completed — their records indicate close scrutiny of U. S. building agencies, laws

Construction legislation is going to get much sharper scrutiny by the Republican 83rd Congress than it did in the 20 years of Democratic rule. That's a conclusion drawn from a study of the congressmen who will head the committees and subcommittees that pass on construction legislation.

There is a clear-cut indication that agencies like the Corps of Engineers and the Bureau of Reclamation will get the closest scrutiny when they want something from Congress. There is a strong belief on Capitol Hill that Congress should tighten its control over these agencies through its powers of authorization and appropriation.

Much of the congressional antipathy toward the agencies has been based on personal antagonism to the former agency heads. With these men now gone, relations between Congress and these agencies should improve. But Congress doesn't expect either agency to change any basic policy under Republican rule.

• **Money from one source**—One important development in handling of construction appropriations is that, in the House, all money for military public works, as well as for civil works, will come under one appropriations subcomittee.

Rep. Glenn Davis (Wis.), chairman of the Civil Works Subcommittee, explained that the new alignment will enable one group to handle all of the Corps of Engineers appropriations.

"It will put Congress in a position better to balance off the Corps' civil functions work against military construction," Davis explains.

• **Important men**—To give its readers a better picture of the men whose decisions will vitally affect construction legislation ENGINEERING NEWS-RECORD has gathered these thumbnail notes:

• A. L. Miller (Neb.), chairman, House Interior Committee. Sometimes conservative, is somewhat of a maverick. Has been critical of Reclamation Bureau in past. Will watch it sharply, probably go along with move in his committee to write severe money limitations in authorizations for the bureau. A practicing M.D. before entering Congress.

• Norris Poulson (Calif.), chairman, Interior Subcommittee on Irrigation and Reclamation, has been critical of Reclamation Bureau in the past, opposed Central Arizona project and Hells Canyon project last year, and has criticized the bureau for "waste and inefficiency" in construction of the Central Valley project in California.

• John Saylor (Pa.), chairman, Interior Subcommittee on Territories and Insular Possessions. A Johnstown, Pa., lawyer who has been blunt and outspoken in criticism of Bureau of Reclamation. Is one of prime movers in Congress on drive to curb authority of bureau.

• Ben F. Jensen (Iowa), chairman, House Appropriations Subcommittee on Interior. Conservative, economy-minded, author of Jensen rider cutting

WILLIAM KNOWLAND heads Senate Civil Functions Subcommittee.

REP. BEN JENSEN—He'll rule on Interior appropriations.

REP. JESSE WOLCOTT—Controls and money are his province.

REP. GLENN DAVIS—Money for civil works is his worry.

back federal personnel. Probably will go along with committee efforts to trim authority of Reclamation Bureau.

• Glenn Davis (Wis.), chairman, House Appropriations Subcommittee for Civil Works. Conservative, will take a long, hard look at funds for Corps of Engineers for military construction, flood control, and rivers and harbors. One of youngest congressmen, he's 38.

• John Phillips (Calif.) chairman, House Appropriations Subcommittee on Independent Offices. Tight-fisted, a free-enterpriser, critical of TVA.

• George Dondero (Mich.), chairman, House Public Works Committee. Leading private power advocate in House. Apt to go slow on authorizing multi-purpose projects. Is friendly to Corps of Engineers—once introduced a bill to let the Engineers market power from their own dams.

• Jesse P. Wolcott (Mich.), chairman, House Banking Committee. Will be a big voice in fate of controls, thinks all controls should be ended as soon as possible and is even against standby controls as opposed to Sen. Homer Capehart, chairman of Senate Banking Committee. Is an outspoken foe of public housing.

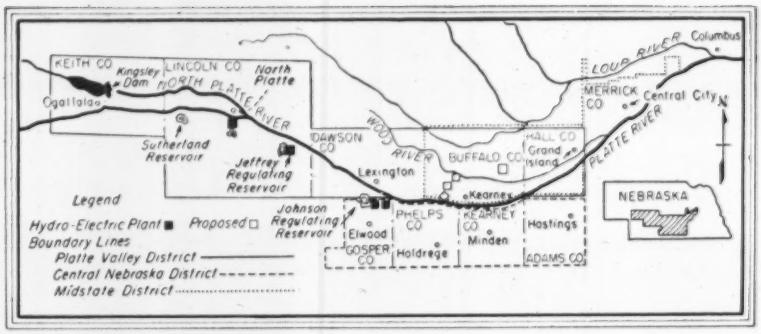
• Irving S. Ives (N. Y.), chairman, Senate Banking Subcommittee on Housing. Most liberal Republican on banking committee, a strong advocate of public housing.

• Ed Martin (Pa.), chairman, Senate Public Works Committee. Conservative, a former National Guard officer, holding rank of major general. Friendly to Corps of Engineers. Is more concerned with water problems, domestic and industrial water supply in the East than in flood control and rivers and harbors activities.

• Hugh Butler (Neb.), chairman, Senate Interior Committee. Conservative, was for the Pick plan as opposed to the Missouri Valley project. Would be in favor of turning Nebraska public power facilities over to a co-op, organized among customers, if Eisenhower should push it.

• William Knowland (Calif.), chairman, Senate Appropriations Subcommittee for Civil Functions. No decision yet whether military construction will be handled by Civil Functions Subcommittee as it will be in House, or under Armed Services Subcommittee to be headed by Sen. Homer Ferguson. Likely will become strong Corps of Engineers advocate.

• Guy Cordon (Ore.), chairman, Senate Appropriations Subcommittee for Interior. Strong for development of West, but not an all-out public power advocate. Fair-minded, considered a "dear friend" both by Bonneville power administration and private power people in the West.



Nebraskans gird for new battle over Platte River diversion scheme

Impending plans to amend state law to permit diversion out of watershed stir irrigation, power proponents

For the third time in 10 years, Nebraskans are choosing sides over waters of the Platte River, and what may be done with them. If previous go-arounds (in 1943 and 1947) are any indication, this should be a real fight. In Nebraska, diversion is a word best accompanied by a smile.

Involved, by local estimates, is something like $50 million in early construction expenditures, and many more millions in the future, both in construction and in farm income.

Three public power and irrigation districts (one of which is still in the planning stage), the state Supreme Court, the state's one-house legislature and the U. S. Bureau of Reclamation are mixed up in the problem.

• **Diversion proposed**—The new battle started when the Central Nebraska Public Power and Irrigation District (known locally as Tri-County) announced it would back another try in the state legislature to have Nebraska's basic water-use law changed to make diversion of water from one watershed to another legal.

At present, any such diversion is against the law, according to court decisions in 1943 and 1947. Nebraska is one of the few states that forbids diversion.

Behind the move are these facts: Tri-County, owner of huge Kingsley Dam on the North Platte River near Ogallala, uses a 70-mi canal system to supply irrigation water to 125,000 acres of land in the Platte watershed, and to produce power. But—as the project was conceived at its inception in the mid-30s—project officers would like to supply irrigation water to an additional 130,000 acres that lie adjacent to the tracts under irrigation.

Thereby hangs Tri-County's trouble. The added 130,000 acres slope toward the valley of the Republican River, to the south—and return flows would run into that stream. Engineers have said that of every inch of water put on central Nebraska land, a half-inch goes back to the streams as return flow. Thus Platte River water would be diverted effectively to the Republican River watershed.

• **More complications**—To complicate matters further, there are the plans of the Mid-State Reclamation District, which has headquarters at Grand Island. Still in the planning and development stage, Mid-State proposes a $40-million development to put water on 400,000 acres of land in three counties bordering the Platte.

Some of this water would come from a complicated series of reservoirs to store spring flows of various normally dry streams, but most of it (450,000 acre-ft) would come from the Platte River. The river would be tapped at a point just below where Tri-County dumps its return into the stream, after passing it through its last powerhouse near Lexington.

• **And still more**—That isn't all.

Others involved include the Platte Pump Irrigators and Water Users Association— a group of farmers who use pump irrigation, organized for the specific purpose of fighting diversion; and, somewhat in the background, the Bureau of Reclamation. As part of the Pick-Sloan Plan, Nebraska would get irrigation for 1,160,000 acres of new land, and more water for an additional 766,000 acres—much of it by diversion of waters of the Platte, Loup and other streams.

The pump irrigators are afraid that diversion will lower the Platte Valley water table dangerously. The bureau can't operate in defiance of state law.

$35-million alumina works planned for The Dalles

Harvey Machine Co. to build primary reduction plant; company lists additional proposed alumina sources

Work will begin immediately on Harvey Machine Company's $35-million primary alumina reduction plant at The Dalles, Ore.

The Defense Production Administration issued a certificate of necessity in late December for 85% of the $65.3-million expenditure.

The new plant's annual capacity of 54,000 tons brings to 164,000 the new aluminum production under DPA's third round of expansion in the industry. In November, DPA issued two certificates of necessity to Olin Industries, Inc., of East Alton, Ill., for facilities to produce annually 110,000 short tons of primary aluminum, together with fabricating facilities.

Besides the reduction plant, $10 million of the total expenditure is allowed for development of bauxite supplies and $20.3 million for construction of an alumina plant, which will be built within three years. Harvey is waiting now for a certificate of necessity before completing plans and deciding on a location for a sheet rolling mill.

• **Seeks bauxite**—Harvey is investigating bauxite supplies chiefly in the Guianas and on Bintan Island, near Singapore. The company is currently engaged in court action over a bauxite mine in British Guiana owned by the Berbice Co., a subsidiary of American Cyanamid. The action will determine whether Harvey or Reynolds Metals Co. will get the mine. Harvey Machine Co., claiming to have a sale agreement preceding one between Berbice and Reynolds, intends to use the mine for its principal source of bauxite.

To develop a domestic source of alumina, Harvey hopes to purchase a government-owned plant in Salem, Ore., one of four built in this country during the war for research in the manufacture of alumina from domestic bauxitic clays. The Salem plant would be used as a research and pilot plant for the treatment of Columbia Basin ores and for manufacture of other chemicals used in the aluminum industry.

Harvey expects to get bauxite from abroad for an indefinite time, but Leo Harvey, president of the company, believes it important to develop American sources for possible wartime use. Clays in the Columbia River Basin have an alumina yield of only about 30%, compared with the 50% minimum yield from bauxite ores. But through improved processing, Harvey hopes to make alumina from the clays economically feasible.

To transport bauxite supplies from Guiana, Harvey is investigating the use of barges, possibly company-owned, which could be towed up the Columbia River and unloaded directly at The Dalles.

Matching trucks, roads for economy study aim

A study has been planned by the Highway Research Board to determine what types, weights and sizes of trucks can be matched with roads and bridges of appropriate capacities to achieve minimum over-all costs for highway-freight transportation.

The board expects to investigate the economics and capacities of over-the-road trucks and later of highway facilities. Studies of vehicle size and weight will start with investigation of packaging methods, commodity densities, market units and tonnages. Also studied will be variations in direct and overhead costs of running trucks as sizes and gross weights increase. Previous partial studies, according to a committee of the research board, show decreases in operating costs as size and weight of trucks are increased, but it is not known at what point savings diminish to zero. To obtain data for this phase of the study, especially in the upper weight limits, the committee will explore private road operations, and trucking on public roads.

Later studies will be made on costs of building highways of varying load capacities, and results will be coordinated with the results of the truck studies to determine, if possible, the ideal balance between truck and highway costs.

Pavement tests are being made or are in planning stages in several states (ENR July 3, 1952, p. 36; Aug. 21, 1952, p. 26; and Jan. 15, 1953, p. 46) to determine effects of truck travel on roads of different types.

Herbert S. Fairbank, deputy commissioner in charge of the Research Division of the U. S. Bureau of Public Roads, is chairman of the committee planning the studies. Field work will be done under the direction of Hoyt Stevens, formerly with the American Trucking Association and now with the Bureau of Public Roads.

News briefs

• **Tolls**—Tolls as a means of financing highway and associated work continued to fascinate state legislators. In Montana, lawmakers were considering a bill that would create a toll-bridge authority, particularly to build a bridge over the Missouri River somewhere between Great Falls and Fort Peck. California had several measures in the legislative hopper authorizing toll-road construction; even British Columbia had appointed a three-man commission to consider possibilities of toll-road construction.

• **Lumber to the rescue**—Lumber manufacturers were pointing with pride to the use of their product to make quick repairs to Washington, D. C.'s Union Station, after a railroad train had hurtled through barriers and through the main floor of the rotunda. Within 24 hours, lumber had covered a 100-by-300-ft hole in the floor, shored up weakened supports so that the station could be used without interruption to handle inaugural crowds.

• **Whose purse-strings?**—A friendly lawsuit may be the answer to a dispute between the New Mexico state government and its state highway commission, over who has authority over commission funds. Under a 1949 constitutional amendment, the state's attorney general said that the finance board acted illegally in cutting $3 million from the highway budget, since the amendment apparently leaves no room for either the legislature or the executive to interfere with highway expenditures.

• **OK SF bridge work**—A $3.5-million program, for strengthening the Golden Gate Bridge (ENR Jan. 2, p. 2), was authorized last week by the board of directors of the Golden Gate Bridge and Highway District. How the work will be financed is yet to be determined. The board also approved a proposal submitted by Clifford E. Paine of Chicago, one of the original engineers on the bridge, for preparing plans and specifications and engineering supervision on the bridge-strengthening project.

• **No help wanted**—Redondo Beach, Calif., enjoying a respite from high tides and high waves that had given its waterfront a terrific pounding (ENR Jan. 22, p. 24), eyed without enthusiasm a $50,000 loan offered by the state for repair of the city's seawall. City officials said they wanted no loan, but a permanent solution of the problem—probably a new seawall.

Congress moves to tighten fund control

Bills introduced to force resurvey of projects, stop by-passing of Congress—other measures reported

Moving swiftly to make good their demands for tighter control of expenditures by government agencies, members of Congress last week introduced three bills to force re-study of irrigation and flood control projects, and tighter budgetary control.

The three were among many bills of interest to the construction industry introduced during the inaugural week. Others included plans for greater aid to school construction, clarification of provisions governing questions of fact on government contracts, and a move to turn over the Central Valley project to the state of California.

• **Water control**—The three bills concerning water control and use were closely allied in purpose.

In HR 1842, Representative Scudder of California called for the revision of the Reclamation project of 1949 for the express purpose of curbing what he said was by-passing of Congress by the Secretary of the Interior. Under present law, Scudder said, the Secretary can make a report of engineering feasibility and then authorize a project without further reference to Congress. Under HR 1842, the Secretary would be required to submit a finding of feasibility plus a breakdown of costs and uses to be derived—and would then be required to submit these reports to Congress for approval before going ahead with the project.

HJ Res. 142 called for immediate revocation and re-authorization of all projects or units of projects (including those of the Missouri Basin work) of the Bureau of Reclamation, for which money has not been appropriated for construction, by June 30, 1953.

In S 376, Senator Monroney calls for the establishment of a temporary commission to investigate costs and effects of watershed programs for flood control in agricultural watersheds.

In a measure similar to HJ Res. 142, Representative Ostertag (HR 1405) wants to direct the Army Chief of Engineers to re-evaluate all rivers and harbors and flood-control projects, authorized but on which construction has not been started, to determine whether or not such projects should be completed, postponed, or abandoned.

A separate bill, HR 1716, seeks to implement California's long-standing program of controlling the Central Valley project. It would authorize the Secretary of the Interior to turn over the operation and maintenance of the project to the state.

• **Contract decisions**—Of particular interest to contractors is another attempt to upset a Supreme Court decision relating to the powers of contracting officers to determine questions of fact in government contracts. HR 1839 would permit judicial review of contracting officers' decisions in these matters, on questions other than those in which fraud is alleged.

The bill is an outgrowth of a controversy that started more than a year ago, in a dispute between the government and Martin Wunderlich Co., contractors on Vallecito Dam in California (ENR Dec. 6, 1951, p. 25). In its decision, the U.S. Supreme Court set up the principle that the contracting officer's ruling on a contract—except in the case where fraud was alleged and proved—is final and binding and not subject to review.

Contractor groups, charging that this ruling means, in effect, that an officer who is party to a contract is also empowered to be a judge when questions arise as to conditions of the contract, set up an immediate clamor for revision of the wording of the law.

As a result of this clamor, a bill was introduced in the 82nd Congress (S 2487) that would provide for judicial review of decisions of contracting officers (ENR April 24, 1952, p. 26). The measure, however, died in the legislative shuffle.

• **Other measures**—Three of the bills introduced last week concerned school construction and financing. S 418 provides that, in determining the amount which local educational agencies are entitled to receive for school construction shall take no account of prior construction under WPA, PWA, or NYA programs; S 537, the School Construction Act of 1953, would authorize grants to states for public-school building; and HR 1612 would provide aid to states for urgently needed school construction.

Another bill, HR 1844, would permit allocation of funds under the Federal Highway Act for construction, reconstruction and maintenance of highway bridge approaches to certain toll structures.

Flood to halt floods floods out a town

A flood to prevent floods has forced evacuation of a residential district illegally—and improvidently—built in lowlands below Redding, Calif.

Some 30 homes ranging in value from $12,000 to $20,000 and a $30,000 dance pavilion have been built in the Sacramento River's flood plain since the completion of Shasta Dam, in spite of warnings by the Bureau of Reclamation that the area would be inundated any time 80,000 cfs flood control releases were necessary.

A dry cycle in the last seven years has kept the reservoir level low, allowing last winter's record rains to be handled without exceeding a 52,000-cfs release rate.

Real estate dealers and builders, optimistically believing that this condition would continue, have progressively developed the area. USBR signs posting the flood plain area were torn down.

But dwindling flood control space in Shasta Reservoir required state and federal flood control officials to raise water releases to the maximum allowable 80,000 cfs Dec. 15 to avoid danger of major floods throughout the Sacramento valley. Despite this action, the 1,300,000-acre-ft reserve required for flood control had been cut by 580,000 acre ft as of Jan. 14.

Water releases were stepped up from 18,000 to 42,000 cfs on Jan. 10, and gradually were increased under pressure of flood waters from the Sacramento, McCloud and Pitt rivers. In one 11-hour period the reservoir gained 77,000 acre-ft.

The maximum releases, which were expected to continue for several days, were ordered in a joint action by the Bureau of Reclamation, the Corps of Engineers, State of California and the Weather Bureau.

"It was unanimously agreed that the present storage of 3,750,000 acre-ft had encroached so far into the required flood control reserve space that a definite danger existed in the entire north valley," Richard L. Boke, regional director for the Reclamation Bureau, announced.

He emphasized that unless additional flood space were provided, the repetition of a storm of the magnitude of one in February, 1940, would cause "uncontrolled flow and major damage throughout the Sacramento valley."

MARTIN DURKIN—Peaceful hearing.

ROBERT TAFT interprets law.

T-H law not aimed at construction

Taft, at Durkin hearing, affirms that the Taft-Hartley act was planned for industrial work. Durkin seeks amendments

Confirming the contentions of most construction men, Sen. Robert A. Taft said flatly last week that the Taft-Hartley law, of which he was co-author, was aimed primarily at industrial employment in factories—not at the construction industry.

Taft's statement came at surprisingly mild hearings that preceded the Senate's approval of Martin Durkin—former president of the AFL plumbers' union—as Secretary of Labor. Although Taft had denounced Durkin's appointment when it was first announced, he sat next to the labor executive at the hearing, and the session produced no clashes.

In fact, Taft's statement as to the intent of the Taft-Hartley law was made in support of Durkin, who had been telling the Senate committee of difficulties his union had encountered in attempting to operate under the law. "We find it quite difficult—and so do the contractors—to operate under that law," Durkin said.

• **Taft interprets**—"If I may interrupt," said Taft, "I think it is fair to say that the Wagner act, and the Taft-Hartley act following it, were primarily conceived, I think, to deal with industrial employment in factories.

"Neither act has fitted the building trades very well, and it has been awkward to apply any of the election provisions. When we passed the Taft-Hartley act in 1947, I certainly did not feel that it was intended to apply to building purely on a local level, but it has since been so applied."

The Ohio Senator continued his remarks by recalling modifications to the law passed a year ago, S. 1973, (ENR May 8, p. 32 and May 29, 1952, p. 30) which permit a contract to be made for labor conditions in advance of start of work.

"I think that anyone who knows the act agrees that in making the labor relations act fit the building trades, a good many amendments have to be made," said Taft. "I fully agree with Mr. Durkin's position on that. . . ."

Taft submits changes in labor law provisions

Almost as if to back up his statements in the committee room, Senator Taft this week offered five bills, to make a total of 15 amendments in the Taft-Hartley law. None of the amendments was considered controversial.

From the standpoint of the construction industry, the most important of Taft's amendments was, in effect, a resubmission of a bill (S. 1973) debated in the last Congress. This measure would in effect legalize the union shop in construction, by making it legal for contractors to sign union contracts before work on a project has actually started.

As submitted nearly a year ago (ENR May 8, 1952, p. 32) the amendment would have superseded any state laws. The new bill, Taft pointed out, specifically makes it clear that state laws will supersede the amendment if there is a conflict. The amendment failed to get through the 82nd Congress because of the violent objections of congressmen of some 15 states which now have right-to-work laws that expressly forbid compulsory union membership.

Other amendments proposed by Taft would: Extend the anti-Communist oath to employers as well as employees; increase membership of the National Labor Relations Board from five to seven members.

Engineer shortage ad campaign subject

Consumer-advertising techniques will attack the engineering manpower shortage this year, it was announced this week by the Advertising Council, Inc., a non-profit organization that conducts campaigns for worthwhile objectives.

Starting with a mass of data that has been gathered by the Engineering Manpower Commission since 1950, the Advertising Council, with the aid of Kenyon and Eckhardt, Inc., advertising agency, has worked up a two-pronged campaign aimed at parents and at employers of engineers. Called "Engineers Wanted," the campaign will strive to coordinate and simplify the engineering recruitment picture for both groups.

For employers of engineers Kenyon and Eckhardt has prepared a booklet, "How Your Company Can Help Promote Engineering as a Career." By acting on the advice of this booklet a company can participate in a united-front action that is intended to clarify the issue rather than to confuse the public and the prospective engineer on the status and future of engineering. In the past many companies have tried to promote engineering in various ways, but of necessity their efforts were local in application, and sometimes contradictory, according to council officials.

The "how to . . ." booklet tells: what the problem is; outlines the advantages of an engineering career so a company may have a basis for developing advertising appeals; recounts current activities of industry in the education and recruitment of engineers; and provides material for use in a firm's own local and national advertising programs.

The idea of advertising appeal to the consumer—the person whose child may want to be an engineer, the high school physics, mathematics and guidance teacher who can advise the child, or the child himself—obviously is an important part of the booklet. And it is primarily through advertising that the campaign expects to reach its second and ultimate objective, more engineers for industry.

Copy is suggested for advertisements, publicity releases, editorials and radio spot announcements—all for local use by a company. In addition, national magazines and other media will cooperate by publishing, free, advertisements prepared by Kenyon and Eckhardt and the Advertising Council.

The Advertising Council took on "Engineers Wanted" after a careful investigation of the need for more engineers. The council found the campaign to be in the public interest."

Canadian construction year

Canadian Construction Association issues calls for more housing, hears of defense work—new officers inducted

To the tune of demands for more work in the housing field, and comfortable reports of work done during the last year, members of the Canadian Construction Association completed their 35th annual meeting at Montreal last week.

The association—which reported its corporate membership at nearly 1,000, an all-time high—elected John L. Flood, president of John Flood & Sons, Ltd., Canada's oldest construction company, as 1953 president. He succeeds Percy G. Wilmut of Montreal. Ray Brunet, of Hull, Que., and W. G. Malcolm of Winnipeg were named vice-presidents-at-large.

Housing and defense work shared the spotlight in discussions that are the feature of CAA's meetings.

On housing, both retiring president Wilmut and Resources Minister R. H. Winters said that housing, after taking second place to defense work last year, was again picking up. Winters commented that completions of 75,000 units are probable for 1952, despite a slow start in the first half of the year. The association, however, went on record as advocating a great increase in house building—with a target of between 100,000 and 125,000 units per year set as "being easily within the reach" of the building industry. The biggest barrier to housing expansion, speakers said, is the need for utilities to new housing areas—and CCA urged cooperation of governmental agencies to ease this problem.

• **Defense work**—Canada's defense-construction program is now about 70% complete, after an expenditure of about $200 million in 1952, according to R. G. Johnston, president of Defense Construction Ltd.

Mr. Johnston, who is on leave of absence from his regular post as general manager of CCA, said that about $150 million was spent on defense work in 1951, and expenditures will drop for 1953.

Johnston said that major work in prospect for the coming season will include a new division army camp at Gagetown, N. B., one of the biggest defense jobs ever undertaken in the Dominion. He commented that the practice of calling for bids, whenever possible, during winter months has increased competition for defense contracts, as has the maintenance of the Alaska Highway during the winter to aid in transport of materials and supplies to outlying job sites.

• **Other matters**—Among many other features of the meeting were:

• A joint meeting of the general contractors and road builders sections, which heard (and questioned closely) David Sim, Deputy Minister for National Revenue and L. Taylor, secretary of the Canadian Customs Board—who discussed importation of heavy construction equipment.

• A report on progress of revision of the National Building Code, by R. F. Legget, director of the Division of Building Research, National Research Council, who reported that the code may be ready by the end of March.

• A report on slow progress in increasing the number of apprentices for the building trades, by J. Piggott, chairman of CCA's Apprenticeship Committee. He reported that 15,000 apprentices are now at work. Of these, 10,000 are working in the province of Quebec. Pigott said that about six times the number of young men now working should be brought into the trades.

• **New president**—The new organization president, Mr. Flood, is a graduate of the University of New Brunswick, and has been connected with construction in the Maritime Provinces for most of his business life. He has served as Canadian Employer Delegate at meetings of the Building, Civil Engineering and Public Works Committee of the International Labor Office on three occasions.

Pennsylvanians argue Delaware water rights

Pennsylvania has challenged Philadelphia's right to intervene in the Delaware River water fight case pending before the U. S. Supreme Court (ENR Jan. 15, p. 28).

The case evolves from efforts by New York City to get an additional 360 mgd of water from the upper Delaware River. New York City seeks amendment of a 1931 Supreme Court order authorizing it to withdraw 440 mgd from the interstate dam.

Kurt F. Panzer, an Indianapolis attorney, has been appointed by the Supreme Court as master and will take testimony at hearings in Philadelphia, New York and Trenton.

Abraham L. Freedman, Philadelphia's city solicitor last month asked Supreme Court permission to intervene on behalf of the city on the basis of its home-rule charter. Freedman has been opposed in this action by the commonwealth, which says, in effect, that it is acting in its sovereign capacity as "parens patriae"—father of the country—and that the city's action would be a derogation of the sovereignty and prerogatives of the state.

Philadelphia sought to intervene because more than one-half of its water comes from the Delaware, because it is the biggest city in the watershed, and because more than 2,000,000 of slightly over 4,000,000 people in the watershed live in Philadelphia.

Group seeks changes in U. S. water policy

The new Republican Congress has before it recommendations for five general changes in water resources development policy.

Although these proposals were submitted by the former Truman Administration, several of them appear to be in line with Republican thinking on waterway development.

Former President Truman sent the recommendations to Congress the day before he left office. These were in lieu of specific legislative proposals, which federal agencies have been working on for more than two years.

Both the Truman water resources message and the legislative suggestions are an outgrowth of the studies carried on by the President's Water Resources Policy Commission, which completed its work in early 1951. The commission last year made public its own legislative recommendations, but they never were adopted by the Truman Administration.

• **What's proposed**—Here are the recommendations:

1. "We should organize more efficient means of regional river basin planning and management in those parts of our country which need improvement."

2. "We should increase our efforts to see that every affected state, and every affected community in a region is given opportunity to share in the responsibility for basin development. . . ."

3. "We should strengthen and simplify our federal procedures for selection among the great volume of project proposals which come to the executive offices and Congress each year.

4. "We must find a better answer to the question: 'Who pays and how much?' . . . The cost of resource projects should be paid more by those who benefit directly from them."

5. "We should see that our development procedure is so designed that it can provide the most in farms and jobs and opportunity for business enterprise for every dollar spent."

AEC work siphons engineer graduates

Survey shows atomic energy work employs 1,000 civils, draws heavy percentages of graduates in all fields

Biggest impact of atomic energy on the economy will come when it is developed as a source of power for industry. That may be years away. But already, U. S. work with the atom has become a factor to be reckoned with by industry. Atomic energy is now the largest new employer of scientists and all types of engineers.

Only the multiple-product chemical industry now hires more engineers and physical scientists out of each year's graduating classes. And a number of those hired by chemical firms go to companies working on atomic energy.

• **Continuing drain**—The implications for business are plain. Engineering and physical science graduates are still decreasing annually—probably will for three to five more years. But foreseeable needs for such technicians for atomic development are going up.

Since the war-time Manhattan District, the really significant work on atomic energy has been done by scientists and many kinds of engineers. In the early days of the Atomic Energy Commission, one of its biggest headaches was the recruitment of such personnel. It's still a headache.

For example, 19 major chemical firms, including some of those performing major contracts for AEC, hired 1,000 college graduates with degrees in the physical sciences in 1951. Last year, AEC and its contractors recruited almost half as many—490—from the June graduating class exclusively for atomic work.

• **1.5% are civils**—Even more impressive was the hiring, chiefly by AEC's contractors, of engineering graduates. A total of 170 chemical engineers, 4.8% of all the graduates last June, took atomic energy jobs. So did 150—1.9% of the electrical engineers; 156, or 1.8% of the mechanical engineers; 91, or 1.5%, of the civil engineers.

As of last June 30, some 13,300 engineers and physical scientists were employed on the operations staffs of AEC and its contractors. Operations staffs are permanent, do not include personnel on construction projects.

Construction jobs account for a large proportion of the more than 1,000 civil engineers working on atomic projects. The number of civil engineers employed, of course, fluctuates sharply with the progress of AEC's construction activities, now near a peak.

• **And more to come**—The big expansion program now under way means that atomic energy requirements for permanent staffers with engineering and scientific degrees still are on the way up. In 1948, when AEC was winding up another round of expansion, it had about 6,200 of these technicians. This number increased to more than 13,000 this year with the boost of the still-uncompleted post-Korea expansion.

According to former AEC Commissioner T. Keith Glennan, the atomic program will need some 4,500 additional scientists and engineers over the next four years. This estimate is exclusive of replacements for present personnel. At that, it's probably on the conservative side.

Replacements pose a serious problem in themselves. Excluding the large numbers of college students who work in the program during summer vacations, the turnover at atomic projects runs upwards of 10-12% per year. At such a rate, AEC and its contractors would have to hire some 1,300 engineers and scientists as replacements during the next twelve months alone.

Fortunately, the turnover estimates include transfers of technicians from project to project, to plants operated by different contractors. So recruiting is at a somewhat lesser rate.

• **Not a loss**—You can't count the recruitment of technicians for atomic energy as a dead loss to competing industries simply because the government maintains a monopoly on the atom.

AEC's contractors switch the scientists and engineers they hire for atomic projects to other work. And AEC itself hires only a fraction of the technical employees in the program—about 900 scientists and engineers.

Big reason for the highly successful recruitment of atomic technicians has been the know-how of AEC's contractors, who do the bulk of the hiring. Firms like Monsanto, General Electric, Carbide and Carbon, and Westinghouse, who have major developmental contacts, have been in the business of hiring bright young scientists and engineers out of the colleges for years.

Penn Turnpike cuts top vehicle speeds

Top speeds of automobiles and trucks on the western end of the Pennsylvania Turnpike have been cut sharply as part of an accident study program.

Starting Jan. 15, on the turnpike from the Ohio line to the Breezewood interchange, west of Chambersburg, or about half the length of the highway, passenger vehicle speeds have been cut from a top of 70 mph to 60 mph, and truck speeds have been cut from 60 mph for light trucks and 50 mph for heavy trucks to 45 mph for all trucks.

At major bridges, speeds will be limited to 45 mph under normal conditions and to 30 mph during adverse weather conditions. Approaching tunnels, the present 50-mph limits will be continued, with speeds cut to 35 mph at portals and in the tunnels.

On the eastern half of the system, except in zoned areas at bridges and tunnels, top speeds will be 70 mph for passenger cars and buses and 50 mph for trucks.

Hundreds of signs are being erected to advise motorists of the new regulations, and the police force is being increased by 17 men.

In announcing the speed cut, Thomas J. Evans, chairman of the turnpike commission, said that this is an experimental undertaking to aid the research group set up recently by the commission to determine what can be done to reduce accident frequency on the turnpike. Participating in the research group are the Union Switch & Signal Division of the Westinghouse Air Brake Co., the American Institute for Research and the J. E. Greiner Co. of Baltimore, consulting engineers to the commission.

• **Sureties back move**—Since the Pennsylvania Turnpike Commission announced the cut in speeds on the western half of its highway, the Association of Casualty & Surety Companies, New York, has proposed that the reduced speeds should be applied to the entire turnpike immediately.

Thomas N. Boate, manager of the association's accident prevention department and a former captain of the Pennsylvania State Police, in announcing the association's proposal, said that the turnpike commission had taken a big step in the right direction but has not completed the job. He advocates a 50-mph top speed limit for the turnpike and said that "the 70-mph speed limit has proved nothing short of legalized murder and suicide." He added that "last year 83 persons lost their lives on the pike, an increase of 17% over the previous year's death toll."

1. CONTROVERSY AROSE when Ray Corbett (right), ironworkers' agent, claimed installation of Pier 57 prestressed stringers which had been assigned to dockbuilders.

2. COMPLAINT was made by Corbett to Howard McSpedon (right),

4. DISAGREEMENT despite mediation causes arbitration step.

president of N. Y. Building Trades Council. Corbett asked him to mediate with BTEA.

3. MEDIATION STEP. McSpedon, Peter Eller (left), chairman of the BTEA, and Arthur Riehl secretary of the BTEA, as board of mediation.

5. MEETING by union members before presentation of evidence.

Pier 57's deck stringers are awarded to dockbuilders

This week, three days before celebrating its association's 50th anniversary—at a dinner for more than 1,200 people—the New York City Building Trades Employers' Association's board of arbitration settled the nation's first jurisdictional dispute over prestressed-concrete construction. BTEA—following a unique procedure by which it acts as sole arbiter—said dockbuilders, not ironworkers, would handle units on below-deck construction of piers.

The 14-man board, composed exclusively of employers, heard arguments advanced by Ray Corbett, ironworkers' business agent, and James Cole, president of the ironworkers local, on why the work of placing prestressed, reinforced-concrete stringers to support the deck of Pier 57 should have been given to the ironworkers.

The contractors—Merritt-Chapman & Scott and Corbetta Construction Co.—had decided that the work of placing the stringers was the function of the dockbuilders.

Corbett and Cole, believing that the right to the work was in the ironworkers' charter, took the case through mediation and arbitration.

• **Arguments**—The ironworkers' arguments were:

• Prestressed stringers were a substitute (in effect) for structural-steel, which was within their province.

• Ironworkers had placed similar prestressed beams on structures in the New York City area. (The ironworkers buttressed their arguments by showing motion pictures of their trade engaged in the work of placing such beams.)

The dockbuilders, led by Charles Johnson, president of their New York City local, rebutted the ironworkers arguments by submitting their char-

6. ARBITRATION BOARD composed of 14 employer members of the BTEA, presided over by Eller, hears the evidence presented by ironworkers and dockbuilders. Ironworkers' evidence included motion pictures.

7. POST-MORTEM. Corbett and dockbuilders' Johnson (right).

8. DECISION rendered by board of arbitration gave the work to the dockbuilders on Pier 57 New York City. (All photos by Compton)

tered (by AFL) right to all work below the backing-log of the piers. (This, in effect, gives them the right to all work below the deck of a pier.)

The prestressed stringers were the effective substitute for the beams which supported the wooden decking of older piers, they said.

After hearing the arguments, which covered two sessions—on two separate days—the board rendered this decision:

"The handling and placing in position of the precast, prestressed-concrete units forming the decking of Pier 57, North River, is the work of the dockbuilders."

This marked the end of a dispute conducted with earnestness and thoroughness by both sides, and during which work never stopped.

• **BTEA**—Founded in 1903, in an era of chaotic labor conditions in New York City's building industry, the BTEA now has 24 affiliated associations representing 1,000 contractors.

Under the guidance of Peter W. Eller, chairman of the board of governors, and his predecessor, Christian G. Norman, the BTEA has been recognized for effective labor relations.

Under its unique joint arbitration plan, adopted in July, 1903, and accepted by the AFL building trades unions, the BTEA in the last half century has established a record for preventing and settling jurisdictional strikes in New York City.

The plan is unique in that the executive committee of the BTEA, composed of 14 employers, sits as a board of arbitration to make final decisions in a dispute between unions. There can be no work stoppage while the dispute is being arbitrated.

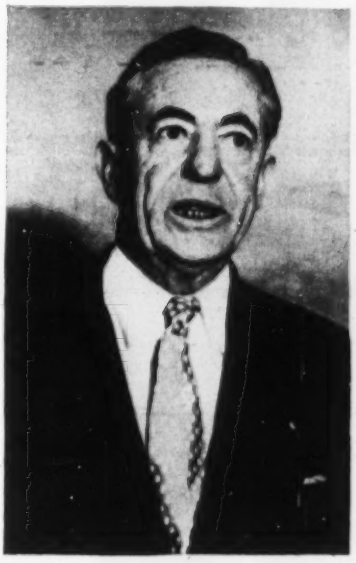
The plan has been recognized and accepted by the Building and Construction Trades Department of the AFL, National Labor Relations Board and National Joint Board for Settlement of Jurisdictional Disputes.

Veteran of union and civic service named Assistant Labor Secretary

Lloyd A. Mashburn, picked by Martin P. Durkin to be an Assistant Secretary of Labor in the Eisenhower Cabinet, is a 55-yr-old Republican with a long record of service in union and civic organizations.

Since November of last year a member of the California State Labor Commission, Mashburn for seven years prior to that was secretary-treasurer of the Los Angeles Building Trades Council. He came to the council in 1940 from the job of business agent for the lathers' union local. In addition to his building trades post, he was secretary-treasurer of the Los Angeles District Council of Lathers before he resigned all three positions to accept the state appointment.

Mashburn's civic posts include membership on the Personnel Commission of the Los Angeles Board of Education, the State Hospital Advisory Board, the State Compensation Insurance Fund, and various special citizens commissions, particularly during the war. He has also been a member of the Los Angeles Chamber of Commerce's Traffic and Transit Committee.



LLOYD A. MASHBURN, selected as Assistant Secretary of Labor, is a veteran California labor leader and former head of the AFL lathers in Los Angeles.

• **Housing**—Mashburn was a commissioner with the Los Angeles City Housing Authority for nine years. He resigned when he took the state job, and hence he wasn't involved in the controversy over the city's $110-million public housing project. He made no public statements on it, but he is known as a believer in public housing to the extent that private industry does not or cannot satisfactorily meet the problem.

A hard-driving man, but a likable one, Mashburn gets his opinions respected and has a reputation among his labor colleagues for being able to whip up the enthusiasm of others. AGC and BCA officials, who have dealt with him in regional contract negotiations, rate him as a responsible unionist. They credit him with an important share in developing the master labor agreement for the area's construction industry that all sides have found highly satisfactory.

His general attitude toward labor-management problems is reflected in a recent statement that labor's right to strike "is the best weapon it has but it should not be in violation of an agreement. At no time do I see any excuse for a strike in jurisdictional disputes."

CISC has informal agreement with WSC on autonomy status

The Construction Industry Stabilization Commission's clash with the Wage Stabilization Committee, in which CISC sought more autonomy from the parent WSC, has been smoothed over.

WSC never answered CISC's "demand" for final authority to approve wage increases which exceed the construction industry formula of 10% above pre-Korean war figures, plus 15 cents for 1952 (ENR Dec 25, 1952, p. 29).

An informal understanding was reached: CISC can go ahead and issue decisions approving increases in excess of the formula, but must send the decisions to WSC for post-review. This means that WSC can't upset a particular decision, but can crack down on CISC if its decisions are found to be too liberal.

Duncan Campbell, CISC co-chairman, says CISC is grinding out decisions at a fairly good rate. The backlog is down to about 400, and a contractor can expect a ruling on a wage-approval application in two weeks if it is not too complicated.

Machinery installation feud continues

Carpenters' feuding with machinists on millwright work keeps contractors in the middle of strike threats

The long-standing feud between the AFL's International Assn. of Machinists and United Brotherhood of Carpenters over which union should handle repair and installation of plant machinery—millwright work—is keeping the National Labor Relations Board busy.

NLRB ruled last week that a contractor and IAM violated Taft-Hartley in 1951 by removing members of the carpenters union from a conveyor installation job being done for the San Francisco Brewing Corp.

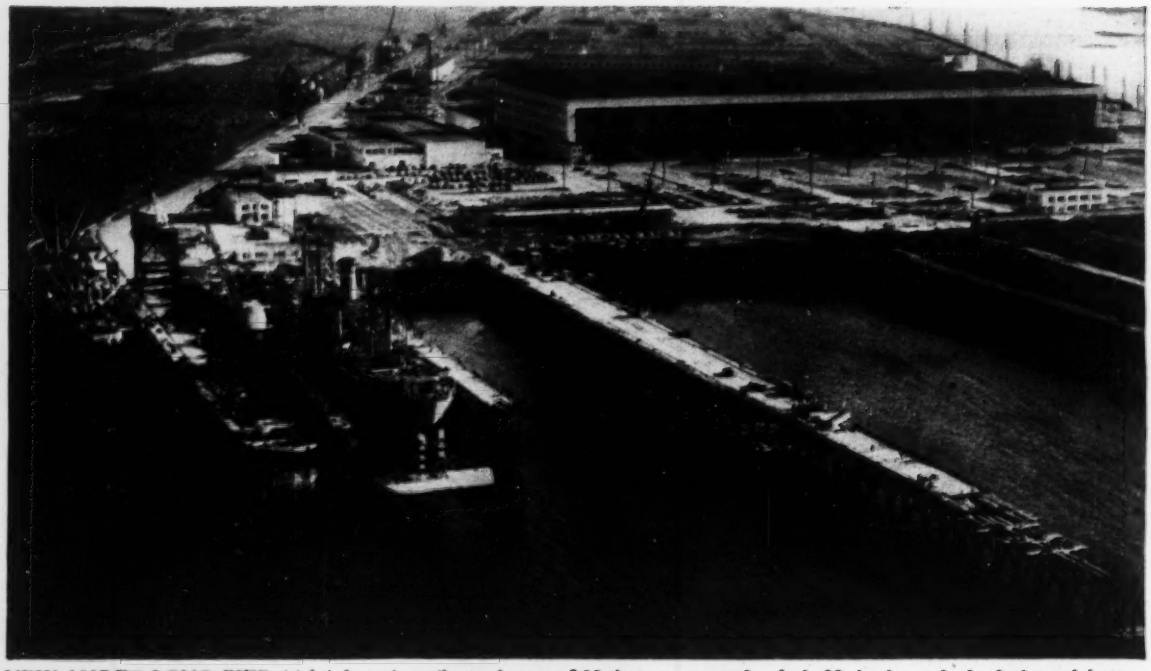
In a related case, about a month ago, NLRB dismissed charges against IAM by Anheuser-Busch, Inc.—which has suffered under the millwright feud for years. In that case, the Board ruled that IAM was within its rights in striking for a contract clause limiting Anheuser to using only those millwright contractors who have IAM contracts. Anheuser had refused to renew a similar clause, under threatened boycott pressure from carpenters claiming the work assigned to machinists.

• **New case**—In the California dispute, no strike occurred. But the Acme Equipment Co., which was using carpenters to install the conveyor system for the brewery, was hit by IAM demands that the carpenters be removed from the job.

IAM, under a contract with the brewery, claimed the work for machinists. The implication was made that if Acme kept the carpenters, the project would be picketed. Acme complied, fired the carpenters and replaced them with men who had been recommended by IAM.

This action, said the Board, was unfair job discrimination on the basis of union membership. Both IAM and Acme must now make up any lost pay suffered by the carpenters during the period they were unemployed.

As long as the feud continues, employers—both contractors and plant owners—are going to remain in the middle: There's strike-threat pressure to limit millwright work to one or the other union and the threat of action by NLRB if there is any union discrimination found to be in violation of Taft-Hartley.



NEW 1087-FT LONG PIER (right) has pipe piles as long as 200 ft to support the deck 82 ft above dredged channel bottom. The structure will service dry docks at the port of Portland, Ore.

Flexible pier has 200-ft pipe piles

Hal W. Hunt
Resident Engineer
Frederic R. Harris, Inc.
Portland, Ore.

EXCEPTIONALLY LONG PIPE PILES—some in excess of 200 ft—are used integrally with batter H-piles to support a pier under construction for the port of Portland, Ore. The great length of the piles is due in part to the 82-ft height of the pier deck above the dredged bed of the Willamette River. As a further consequence of this height, the structure must be somewhat flexible—that is, it will to some extent deflect with docking forces rather than rigidly resist them when they occur.

The pier will provide improved facilities for operation of floating drydocks at the port's Swan Island installation. The 82-ft height above the dredged river bottom is due to the 50-ft minimum depth required for operation of floating drydocks, plus 30 ft needed for normal river fluctuation and 2 ft of freeboard for the drydocks.

Floating dry docks of 14,000 to 15,000-ton capacity are to operate at opposite sides of the finger pier. These dry docks exceed 500 ft in length. The main section of the pier is 580 ft long and 50 ft wide to accommodate high capacity gantry cranes and provide work room for servicing a ship within the drydocks. The gantry cranes have a 32-ft track gage and are centered on the pier to service ships on either side.

Beyond the moored drydocks, a 32-ft wide section extends an additional 507 ft, making the over-all length of the completed pier add up to 1,087 ft.

Transition from land at El +32 (above low water) to adequate water depth for dry dock operation at El −50 immediately adjacent is provided by 69-ft dia circular sheetpile cells with connecting arcs. Six new cells are required for a waterfront distance of 450 ft; an anchored Z-pile wall adds additional length in an area where dredged depth is substantially less.

• **Drydocks will be rented**—The drydocks and auxiliary repair facilities are available to ship repair firms on a rental basis—perhaps the only such marine repair facilities provided as a public service anywhere in the United States.

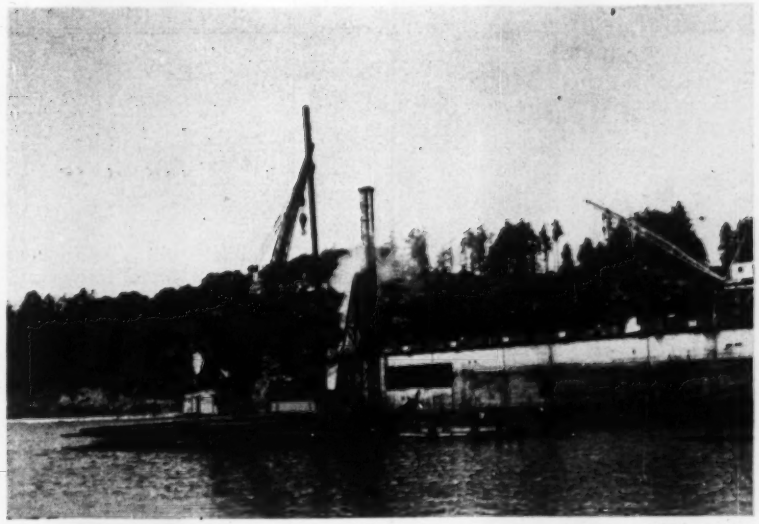
The Port of Portland Commission, owner of the improvements, was established as a state agency in 1891 to (1) make and maintain a channel to the sea (about 120 miles on the Willamette and Columbia rivers) adequate to accommodate and promote the maritime commerce of Portland, and (2) to provide and operate drydock facilities at Portland necessary for a deep-sea shipping port. Another agency, the Commission of Public Docks of the City of Portland, provides piers and some storage for transfer of goods.

Although there is a clear separation of functions—since the Port Commission handles navigation and ship repair while the Dock Commission is responsible for handling goods in commerce—there is some reason, and continual agitation, to combine the two agencies.

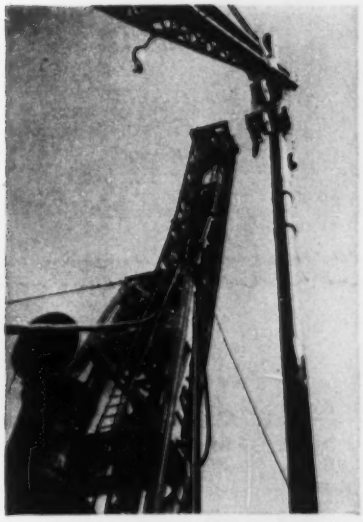
During the 1920's the Port Commission developed 244-acre Swan Island from a mud flat, as a by-product of channel dredging. The island, connected to the mainland by a causeway, became the Portland Airport so that the Port Commission added air navigation to its marine interests. As planes became larger, the island airport became inadequate and other facilities were developed for air transportation.

In 1940, the island was leased by the U.S. Maritime Commission and C-4 tankers were built there by one of the Kaiser companies. When Swan Island was released by the Maritime Commission in 1948, part of the facilities were acquired by the Port Commission.

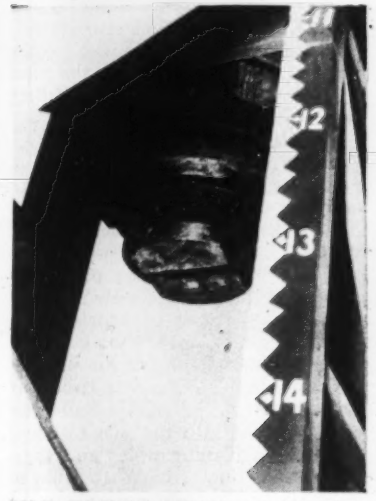
Wartime shipbuilding facilities at Swan Island acquired by the Port Commission included an outfitting



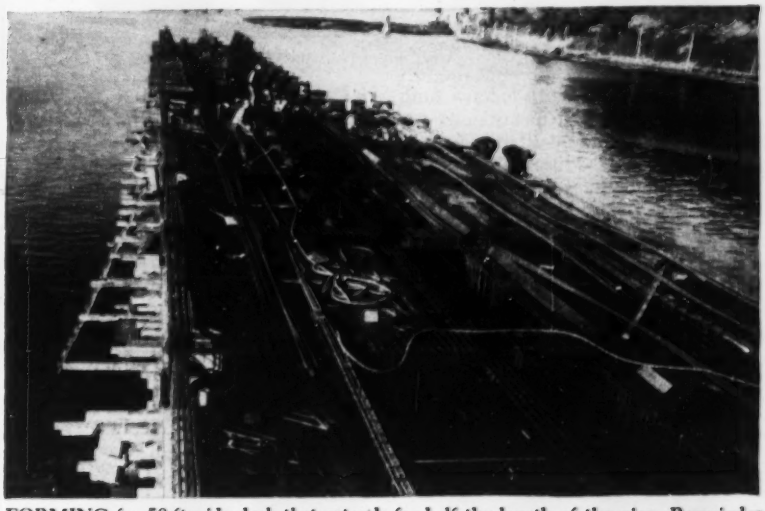
BARGE-MOUNTED DRIVER with 100-ft swiveled leads serviced by a 75-ton full-revolving crane drove the long piles. Here a 120-ft pipe pile section is picked up by the crane from a waiting barge load.



CRANE FEEDS PIPE PILE to driver leads. Sections 120-ft long were driven, with 80-ft lengths welded on later.



PILE DRIVER HEAD suited to drive three pile sizes; namely, 18 and 24-in. pipe piles and 14-in. H-piles.



FORMING for 50-ft-wide deck that extends for half the length of the pier. Remainder is 32 ft wide, its 507-ft length bringing total pier length to 1,087 ft. Drydocks are moored alongside the wider portion of the pier.

dock 2,500 ft long for berthing five ships and a short finger pier at which a three-piece steel floating dry dock was operated. Serving the facilities are five traveling gantry cranes of 45 to 75-ton capacity. These machines weigh 200 tons each and have a top load concentration of 114 tons at any support.

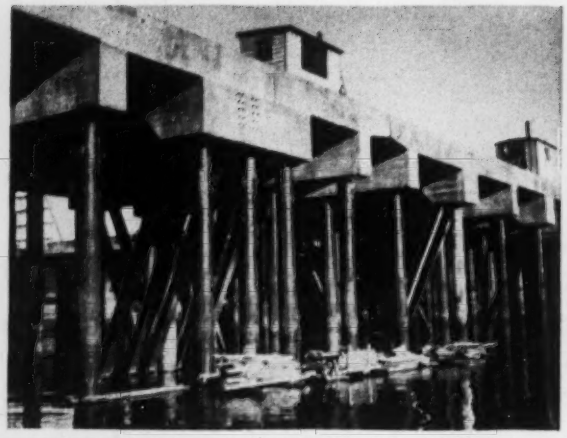
• **Design considerations**—The traveling cranes, together with an M-30 locomotive (170 tons) at the center of the pier, two H15-S44 truck and trailer loads, and other areas on the pier figured at 1,000 psf give a substantial load to be carried 82 ft above the supporting ground. Because the uniform loading of 1,000 psf gives higher stresses than the truck loading, trucks were eliminated from computations for the main pier deck. For design of longitudinal beams, deck load was reduced to 800 psf, and for piles and capping to 750 psf. Wind load is computed at 20 psf on the side of the dry dock and the maximum ship that can be docked.

For the narrower outer end of the pier, the locomotive loading and two trailer trucks, plus area loading on open deck were used for computation. To this was added a lateral horizontal load of 3,000 lb per lin ft for the entire length. Low water depth at the outer end of the pier is 30 ft, just sufficient for movement of ocean-going ships.

Excessive loads to be supported high above the ground posed a problem of economical design. Connecting sheet-pile cells were considered and would have been cheapest to design. But, such cells require a considerable amount of steel. And, sheetpiling would create an undesirable dead-water pocket.

H-piles were studied, but allowable load on individual members is low because of the long length; it would be expensive to do any bracing below the water surface, where depth might vary from 50 to 70 ft.

Precast piles did not appear economical, due to reinforcing for handling and the very considerable weight; also, the depth to which the piles



CONCRETE BEAMS SUPPORTING PIER DECK combine with pipe piles to form horizontal force resisting bents. Batter H-piles framing into beams give added lateral strength.

RESIDENT ENGINEER AND CONSTRUCTION SUPERINTENDENT are Hal W. Hunt (left), Frederic R. Harris, Inc., and Leland Cox, Guy F. Atkinson Co., Inc.

would be driven was not certain and it is difficult to splice a long length on precast piles.

The support found most economical is pipe piles—24 in. dia for the main pier where the cranes operate; 18 in. dia for the portion beyond the dry docks where water depth is less. Both sizes have ⅜-in. wall thickness (it was necessary to use a few 20-in. dia ⅜-in. wall pipe when additional 18 in. dia pipe was not available).

Pipe piles have a high radius of gyration in proportion to the weight; they can be spliced if necessary to add length beyond what it is practicable to handle in one piece and they will withstand hard driving.

• **Lateral force resistance**—It is desirable to have a pier somewhat flexible transversely. A rigid structure suffers greater local damage from a ship striking it, and the floating vessels also are more severely damaged.

The pipe piles embedded in a concrete cap could be designed as a portal frame to withstand lateral loads. However, lateral or horizontal deflection would increase with increase in load and cause added bending stress in the piles under vertical load. After investigation it appeared uneconomical to provide extra thickness in the vertical piles because of the bending stresses induced by lateral loads. So steel H batter piles are placed to receive a direct load. These piles, 14-in. 89-lb sections, used at right angle to the pier on a 2¼ to 1 batter, were added, and the lateral load on the pier proportioned between the battered H-piles in direct load and the vertical pipe piles in bending.

Concrete-capped bents of five 24-in. dia pipe are used at 21-ft centers for the 580 ft of main pier. Two batter H-piles driven at alternate ends of alternate bents are incorporated into the structure by inclusion in the heavily reinforced cap. For the lighter loaded outer end of the pier, two 18-in. dia pipe piles are used with one H-pile battered in each direction to make up the bents, also at 21-ft centers.

• **Open end piles, 200 ft long**—The pipe piles were driven open-end with the natural material left inside to add friction value. It was hoped that friction both inside and out on the pipe would be sufficient to carry the required load at moderate depth in the silty sand. Apparently the silt has a high lubricating value; adequate resistance to driving and to 300 to 450-ton test loading did not develop until the pile tip reached highly compacted material at 110 to 125-ft penetration below the river bed, making some of the piles in excess of 200 ft long.

Material inside the 24-in. piles compacted 12 to 15 ft from driving; compaction was greater inside the 18-in. piles, about 15 to 18 ft. Consideration was given to not filling the remaining upper portions of piles at all but it was thought that the stiffening effect of filling would be worth the cost. Also, there was a problem of water freezing and bursting the pipe if an impervious filler were not used.

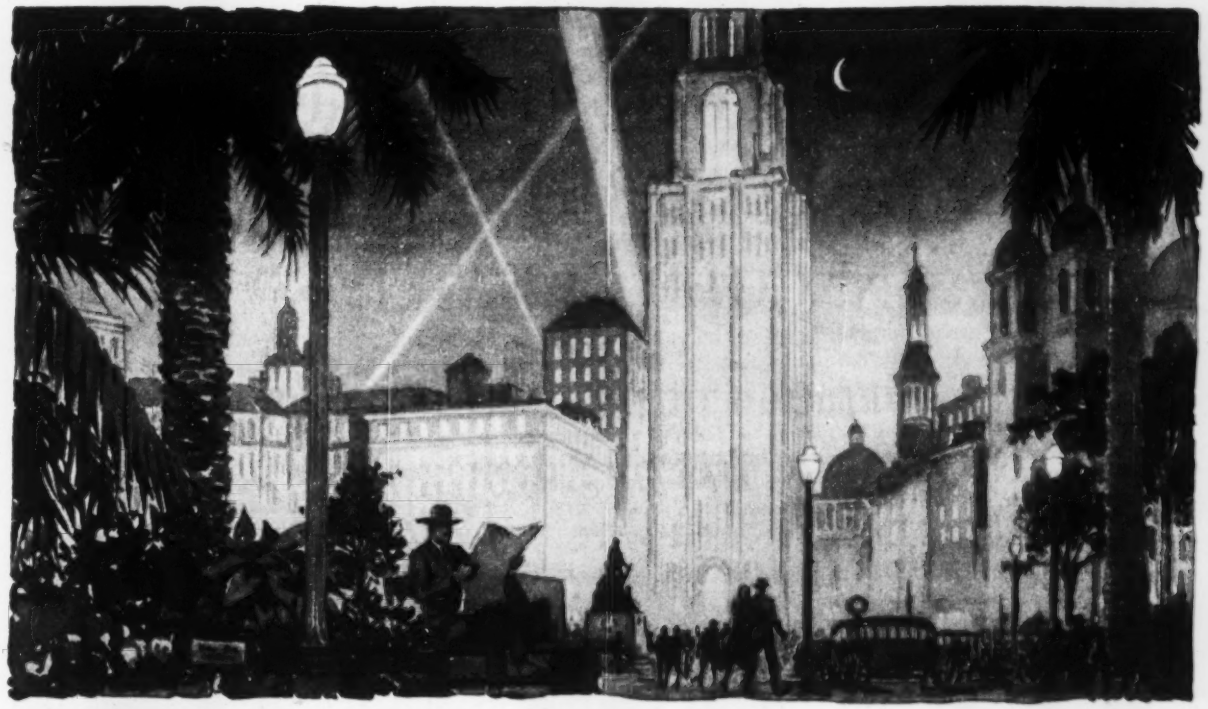
Pipe piles were driven with special leads erected at one end of a 116 x 52-ft barge carrying a 75-ton full-revolving crane. To accommodate driving the batter H-piles, the 100-ft leads were hinged 57 ft above the barge deck and arranged to swing on a pin and "moonbeams." Pipe was received in 40- and 50-ft sections and was assembled in maximum lengths that could be placed under the hammer in the leads. This varied from 100 ft to 140 ft depending on river stage and the dredged depth.

After a first section was driven, an additional length of pipe was set on and welded in the field to make the total length required. The pipe was sufficiently stiff to stand after it was tack welded. Driving the second section was done with the hammer operating in a frame held on the pipe pile, so that only short guides rather than leads were required.

• **Driving head for 3 size piles**—A special driving head was made by the contractor to fit inside the 24-in. and 18-in. pipe with ½-in. clearance and to provide a slot for the H-piles. Despite hard driving, curling or battering of the pipe occurred only in a few cases, at least some of which could be attributed to out-of-square condition of the driving end of the pipe.

Nearly all the water was bailed or pumped out of the piles. Sufficient gravel was put into the pile to come above any remaining water and then concrete was dumped into the pile to fill it. There was some discussion about segregation in dropping concrete up to 90 ft. Investigation showed dumping concrete had been done to greater depth in larger openings by the Tennessee Valley Authority. That concrete was cored and found to be of the very highest quality. No coring was done at Portland but the concrete was carefully watched and no segregation was apparent. There was no reinforcing inside the pipe to impede the fall. Dowels were placed at the top of the pipe after concreting was finished.

Heavily reinforced concrete ties the tops of the H-piles and pipe piles into a unit. The concrete deck beams for the main pier section are let down into and reinforced through the pile caps to tie the caps and deck into a unit. The lighter outer end of the pier has the cap and deck placed monolithically. Expansion joints are



Night - *like the Light of Day*

THE SUN drops behind distant hills . . . Darkness enwraps our material existence . . .

But night has little of its pristine terror and tragedy . . .

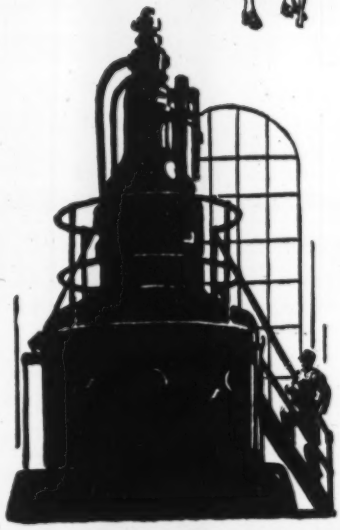
For witness a wondrous transformation . . .

Electricity dispels the darkness—and the *light of day returns!*

Streets become safer . . . Emergencies in the home and hospital are met . . . Industry functions with nightshifts . . . And storekeepers pursue their trades! . . .

Because of ELECTRICITY generated, often times, hundreds of miles away. Mighty hydraulic turbines tirelessly transform water's energy into useful mechanical energy for the benefit of man!

For more than 77 years, we have pioneered and led in this utilization of water. As a result, we have a wealth of experience and engineering skill *which you can use at a profit by placing your power problem in our hands!*



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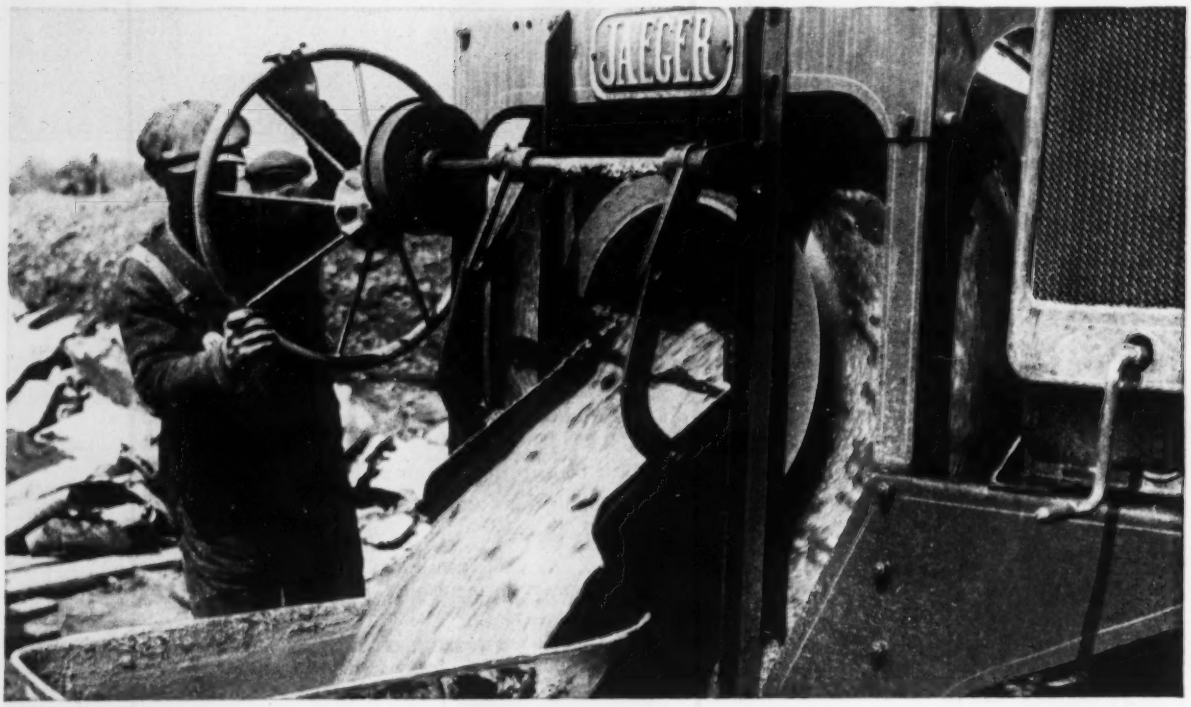

Modern construction methods do not permit long wasteful periods of waiting for concrete to gain working strength. Consequently, the use of Dowflake, Dow calcium chloride 77-80%, as an admixture is extremely important.

At a temperature of 25°F., plain concrete requires six weeks to attain a strength of 2000 p.s.i. With a 2% addition of Dowflake, under the same conditions, only *seven and one half days* are necessary. As the temperature goes down the acceleration value of Dowflake becomes even greater.

Dowflake provides curing, too, by reducing the moisture loss during the early hydration period and by accelerating the hydration action while moisture is present.

Dowflake may be used with *all* brands of Portland cement, with high early strength cement and with air-entrained cement. If you are not already taking advantage of the benefits of Dowflake, write Dow today for complete information on how Dowflake makes sure that you meet tight production schedules *all year around*. THE DOW CHEMICAL COMPANY, Midland, Michigan.

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used at about 140-ft intervals, which divided deck concreting into 10 sections, for which two sets of forms were used.

Individual pipe piles swayed in the breeze but as the five in a bent were held by framing and filled with concrete they stiffened considerably. When the cap was placed, restraining the top of the pipe and incorporating the H-piles, considerable force was required to effect any movement. When seven bents were incorporated into a 140-ft monolith, the pier became very stiff indeed and barely moves under any normal load.

• **Waterfront bulkhead**—Another major part of the construction is the sheetpile bulkhead. The circular cells forming the bulkhead are of somewhat conventional design, with flat-web ¾ in. thick interlocking sheetpiling. Cell diameter is roughly equal to the differential levels of the soil. Top of the cell is El +32, a berm of earth is left at El −40 with the ground sloping 1:10 to the required −50 elevation. The cells require 172 pieces of 15-in. wide sheets to give a theoretical diameter of 68.42 ft.

Bottoms of the sheets were required to be driven to El. −73 for adequate toe hold. A length of 105 ft of sheetpiling was necessary on the river side of the cells but this was reduced to 90 ft on the land side. The sheetpiles in the rear quadrant were specified to be welded across the joint for uplift resistance. The contractor tried to set some sheets welded in 90-ft lengths but they were too limber to handle easily.

Sheetpiles drove substantially harder than nearby pipe piles, due partly to interlock friction and perhaps to springing under the hammer. Sometimes a 1,000 ft-lb. double-acting steam hammer seemed to do better than the much heavier 8,750 ft-lb model.

Method of installation of the cells was left largely to the contractor. A two-ring template was set on temporary wood piling and the sheets for the bottom section of the piles set and closed around the template. Sheets were driven down to about the top of the water and the upper lengths added. In setting the sheetpiling around the template it was found that there was always a "gain" so that after first use the cell template was lagged to 4 in. greater diameter than the theoretical.

Connecting arcs generally were set after the cell was driven but in all cases ahead of filling the cell. Installing the arcs seemed to cause pulling of the cells to the arc connection and resulted in the arc section of the walls being substantially outside the theoretical position. It is possible that filling the cells before installing the connection arcs would hold the T's in shape and prevent this movement. This was not done on the work at Swan Island but might be worth a try on similar installations.

It was stated that splices were required only on the landward quadrant where uplift would occur on sheetpiles. Where the top and bottom sections were not welded there were some instances where the lower section of a pile followed the adjacent sections down leaving an opening at the joint between sections. These were located by a diver and closed by driving. For similar installation conditions, sheetpiles probably should be held together mechanically while installing. Light welding will not withstand driving but bolted-on plates seem to be adequate for such construction.

• **Other facilities provided**—In addition to the pier itself, facilities provided by the Port of Portland at Swan Island for marine repair and ship service include potable water, river water (for washing hulls and for fire protection), steam, compressed air, and electricity. These facilities are available for the full length of the pier but are installed under it so that the area is clear for operation of equipment and handling of ship lines.

A feature is a power winch on the bulkhead at the head of each dock and at the extreme outer end of the pier. These winches are used to pull ships in and out of the docks, thus reducing tug time and giving better control of vessels.

On shore, a 76 x 193-ft building houses shop equipment available for maintenance work of the owner and for use on a rental basis by ship repair men when desired. A "Marine Repair Contractor's Building" has three 40 x 76-ft spaces for dockside operation of ship repair firms. This structure is designed to be extended for additional rentals if required.

Another 40 x 76-ft space is provided for lunch and toilet space for repair workmen. A second floor over this area accommodates only dry dock administrative offices. Buildings are steel frame with light-weight aggregate concrete-block walls and built-up roof over precast concrete plank.

The major construction is being done by Guy F. Atkinson Co., under a $2-million lump sum contract. Total cost of the dry dock consolidation and improvement program of the Port of Portland is in excess of $3 million. Prior to advertising for bids for the project the Port agency (1) used its own 30-in. cutter-head suction dredge to excavate to the required 50 ft depth, (2) removed some of the old ways by contract, (3) purchased and had on hand steel sheet-piling, H-piles and pipe expected to be required for piling, and (4) purchased and had promise of early delivery on most of the structural steel required for the project. Having materials available for start of the work is believed to have been a very favorable factor in the bidding.

• **Credits**—For the Port of Portland, W. L. Williams is president of the Commission and J. J. Winn, Jr., is general manager. The pier was designed by Frederic R. Harris, Inc. under direction of E. J. Quirin and C. J. Murphy. Field work is supervised for Harris by the author.

Joseph B. McNabb is project engineer and Leland Cox superintendent for the Guy F. Atkinson Co. Harry Hunt is manager and William Chance engineer of Atkinson's Portland district office.

Arizona has rain aplenty, first time in decade

In one brief year, Arizona's water situation has done an about face from paucity to plenty.

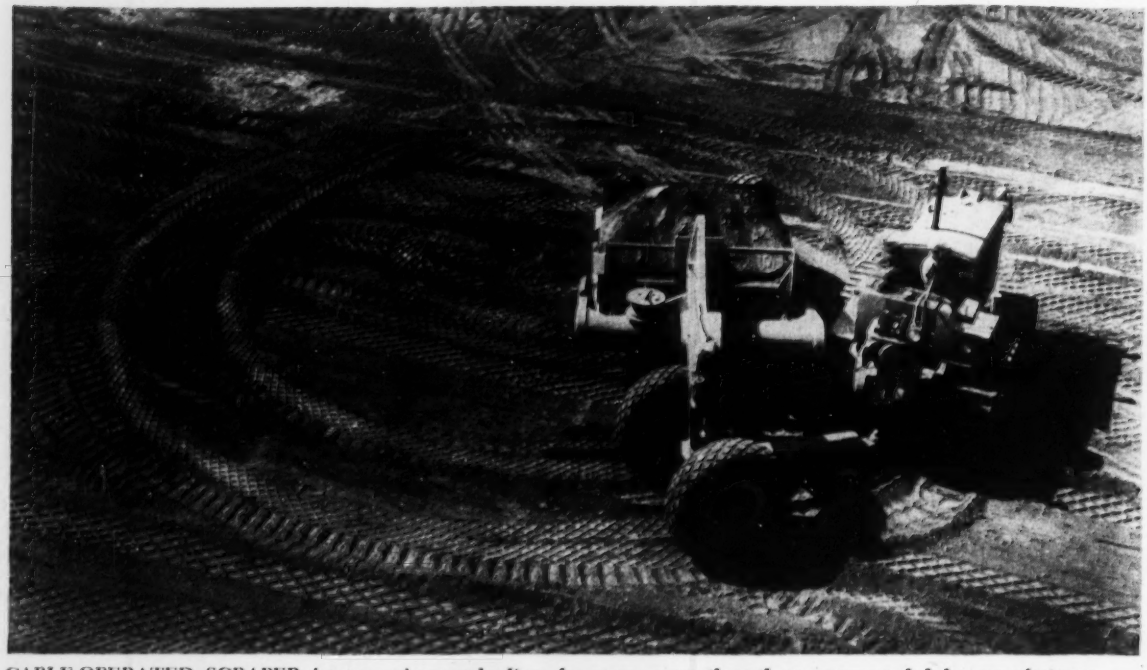
At the start of 1952, Arizona had suffered a dry decade. During the year —a year in which the rainmakers were busy, and the best in the history of the Salt River Valley Project—reservoirs filled almost to the brim from Salt River and Verde River runoff. And prospects for 1953 are even better, with good snowfalls on the watersheds and indications of continued winter and spring storms.

Salt River Project reservoirs are capable of impounding 2,000,000 acre-ft of water. At the start of 1952 they held only 249,707 acre-ft. By the year's close they contained 1,400,000 acre-ft.

All of this means a continued supply of cheap hydroelectric power for the Salt River Project and an abundance of irrigation water for the Central Arizona Valley farmland.

In view of this, shareholders of the Salt River Valley Water Users Association were allotted two acre-ft of water for the $7 assessment with the privilege of buying an additional acre-ft for $4. This is enough to provide double cropping of lands this year.

Elsewhere on Arizona's water picture for the year the groundwater table continued to drop at an alarming rate—from 5 to 10 ft in the year because of unrestricted pumping; the Wellton-Mohawk Project was brought in for Yuma County farmlands. This $42-million project, scheduled for completion in five years, eventually will put Colorado River water on 75,000 new farm acres.



CABLE-OPERATED SCRAPER imposes wire-rope loadings far more severe than those recommended by manufacturers.

For wire-rope users:

Why not follow the maker's recommendations?

L. C. Torrell
Wire-Rope Engineer
Bethlehem Steel Company
Bethlehem, Pa.

EVERY WIRE-ROPE USER knows that the wire-rope manufacturer makes no secret of the best conditions for the use of his product.

But if the user takes time to check rope-use conditions in the equipment he buys, he is likely to find a "substandard" situation, and ask himself, "Do these machinery designers know what they are doing?"

The chances are excellent that they do know what they are doing, but it takes some explaining.

In years past most wire-rope manufacturers have published tables entitled, "Recommended Sheave Diameters" and "Recommended Safe Loads" for various sizes, constructions, and grades of wire ropes.

It has been obvious to most designing engineers, who are familiar with such terms as "safety factor" as used in the proper engineering sense, that these recommendations were drawn up to get the longest service life from any given rope. The standards were not related primarily to hazards, risk of life and limb, and safety in the layman's interpretation of those words, since those factors are far more dependent upon the over-all design of the equipment on which the rope is used and on the conditions of operation.

It is well known, particularly among designers of rope-using equipment, that wire-rope makers' recommendations are seldom followed in the building of mobile equipment, but the reasons why and the results that may ensue if variations are not adopted are not too well understood.

• **Consider other factors**—The designer must consider such factors as first cost, over-all performance, utility, mobility, and operating cost of the unit as a whole. Wire-rope performance and cost may be only one relatively small factor. If the optimum of light weight and portability is a requisite, the attainment of this goal may necessitate the use of small sheaves and drums and a heavily loaded rope which, of course, entails shorter rope service life and a higher rate of rope consumption.

• **Take the scraper**—An outstanding illustration of such equipment design is found in the scraper wagon excavators that operate with wire-rope controls.

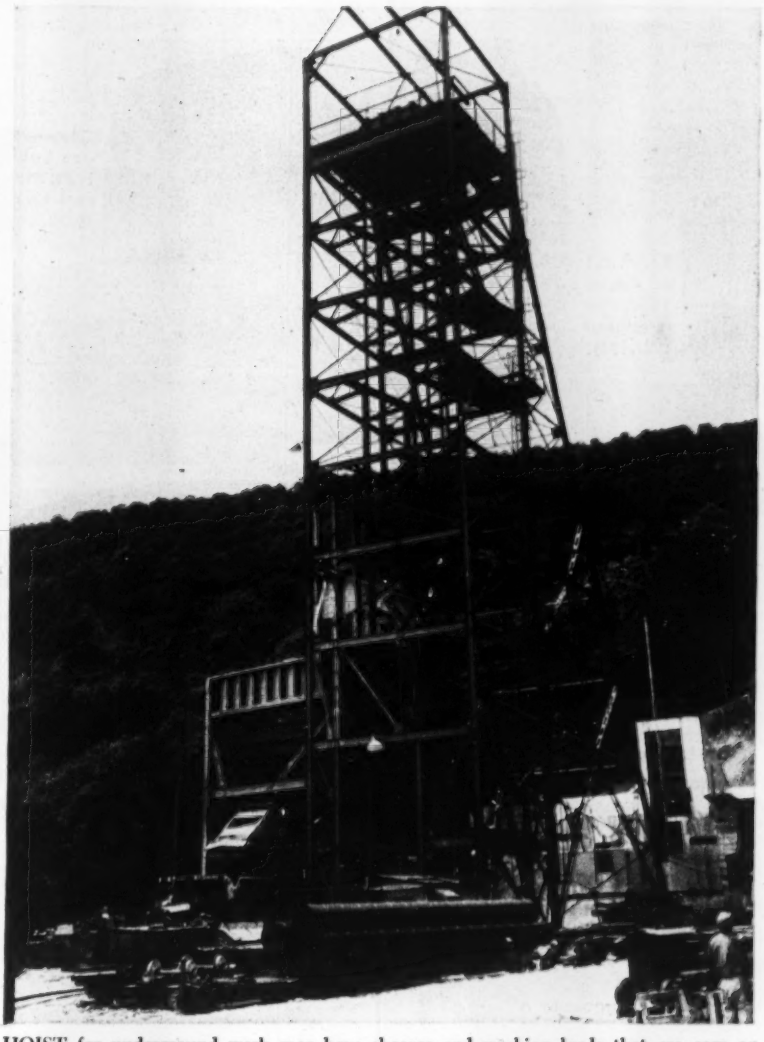
On this equipment, rope operating conditions are not very good from a wire-rope engineer's viewpoint: Sheaves and drums are small; drum-winding conditions are bad; and there are many reversed bends.

The rope can be broken from shock loading by one moment of careless operation: So for this condition the designer has obviously provided little or no so-called wire-rope "safety factor." Yet these machines have completely revolutionized earthmoving.

They dig, transport for long distances, and spread huge loads of earth at far lower cost than attained by any previous methods, and without undue hazard to the operators. The low operating cost is attained by good "design" and despite a relatively high hourly rate of rope consumption.

• **Take the mine hoist**—In extreme contrast, consider the conventional mine shaft hoist installation. Here the designers' basic problems are entirely different. The equipment must usually last for the life of the mine, which may be many years, and operate with maximum reliability at low over-all cost. There are no portability problems beyond the limitations of the initial transportation and installation of the machinery.

Wire-rope consumption is a sizable item in over-all operating costs, so engineering economics require the use of large sheaves and drums, as well as other adjuncts that help to insure the longest possible useful rope service life. Such design features can easily be provided in this type of equipment.



HOIST for underground work may have sheaves and working loads that are easy on wire rope. (This is headframe for shaft to East Delaware Tunnel, in New York State.)

In fact, here the wire-rope engineers' minimum recommendations are commonly exceeded, with the result that the useful rope life attained in this service, in terms of tons moved or ton-miles, is at a maximum.

Between those two extremes is the oil-well rotary-drilling rig, which is a classic illustration of what engineering designers can do with a difficult problem. The petroleum industry accepts as commonplace a unitized rig that will drill a well to a depth of more than two miles, handling loads of several hundreds of tons in this normal operation. This equipment is so portable that it can be moved from a completed well to a new location several miles away and be drilling again in a matter of hours.

The over-all performance and efficiency of these rigs contribute materially to the low cost of today's petroleum products. Wire rope is an important element in this machine, hence the designer must consider its longevity and reliability along with the essential portability of the rig as a whole. However, common sense tells us that the ideal rope-operating conditions of a mine shaft hoist installation cannot be provided here, because of bulk and weight.

The huge peak loads occasionally handled by such rigs, as contrasted with the more normal or average operating loads, must be taken care of by increasing the working load on the rope. Engineering economics requires these compromises and the result is a rope service life of perhaps one-tenth that attained on shaft hoisting equipment. Other design factors and economics make these compromises practicable.

• **Is it "safety factor?"**—It is unfortunate that in a few instances laymen with no understanding of engineering terminology have given the layman's interpretation to such expressions as "recommended sheave diameters," "recommended safe loads" and "safety factor," and have created the impression that if those quite old suggestions of the wire-rope manufacturers are not followed, personal safety will be sacrificed.

Trained engineers, of course, understand that "safety factor" is nothing but a name for a ratio of material strength to calculable and foreseeable loading thereon. Such design ratios can and do vary quite widely, depending on material and over-all conditions of use. The engineer designing a given piece of equipment has knowledge of all factors affecting its design, hence to avoid misinterpretation outside the engineering profession we should perhaps use the more accurately descriptive term "design factor" instead of the potentially misleading term "safety factor."

The actual working load on a wire rope includes not only the dead load but also the added stresses resulting from acceleration, retardation, and shock from any other source. Rope life is affected by those factors and also by the size of the sheaves, drums, and attachments, and the care it receives in operation. The equipment designer, therefore, must select the rope after considering all economic and design factors and, of course, the effectiveness of the machine as a whole.

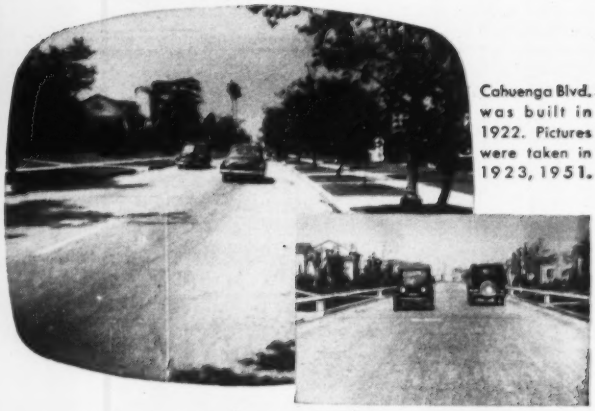
Obviously it should not be said that a new rope, fully loaded to one-tenth, one-fifth or to even more than one-third of its minimum rated breaking strength, is not "safe," for none will break under such loads. It can only be said that if all other operating conditions are the same the useful operating life of the most heavily loaded rope will turn out to be the shortest.

It may surprise many to learn that some rotary lines have been operated in deep-hole drilling with a factor as low as 2. Certainly, from the standpoint of long rope life, a wire-rope engineer normally would not look with favor on such a low design factor. It means relatively short rope life, and involves close attention and supervision, but other factors than rope life probably more than compensate for the more rapid rate of rope consumption.

The wire-rope manufacturer's advice on application problems is always available and is commonly helpful, but users should understand that the equipment designer, with full knowledge of the over-all problem, also can contribute valuable assistance in many cases.

To summarize, the size and type of wire rope should be determined by safety requirements, economics of rope life and need for portability.

Terminal St. Built in 1920. Pictures taken 1921, 1951.



Cahuenga Blvd. was built in 1922. Pictures were taken in 1923, 1951.

Here today – *and still here tomorrow* ... that's the story of Los Angeles' Concrete Streets

Los Angeles has more than 1000 miles of concrete streets. Its city officials, taxpayers and motorists thus know the outstanding value they get from concrete pavement.

Like those shown here, many of these streets are 25 and more years old. Most are still in good condition, will likely go on serving for many more years. They were moderate in first cost, have required little maintenance and have had long life. That's real ***low-annual-cost*** service.

Concrete streets all over America are giving similar service. Most of them were designed for yesterday's comparatively light traffic yet are carrying today's heavier loads.

Today concrete streets can be built even better because of improved design, materials and construction methods. For more information about designing and building concrete streets ask for a free booklet, distributed only in the U. S. and Canada.

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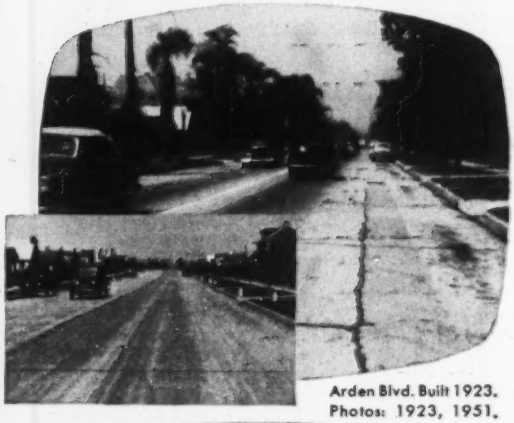
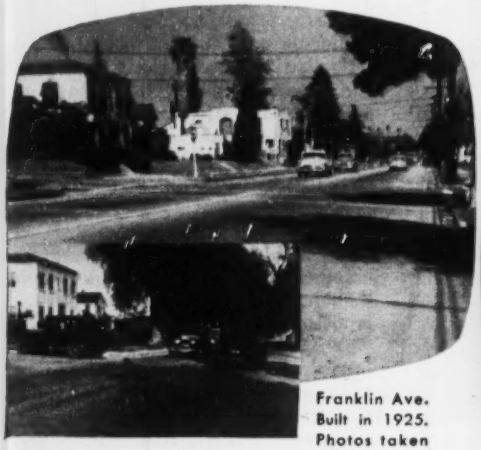


Arden Blvd. Built 1923. Photos: 1923, 1951.

Hill St. at Adams Blvd. was built in 1923-24. Photos were taken 1927, 1951.

Queens Rd. Built in 1925. Photos taken in 1926 and 1951.



Franklin Ave. Built in 1925. Photos taken 1927, 1951.

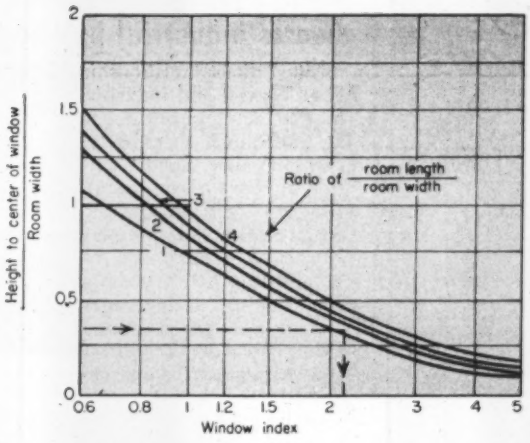


FIG. 1 WINDOW INDEX for light from the sky on a window —needed for determining light intensities in a room—may be obtained from this chart.

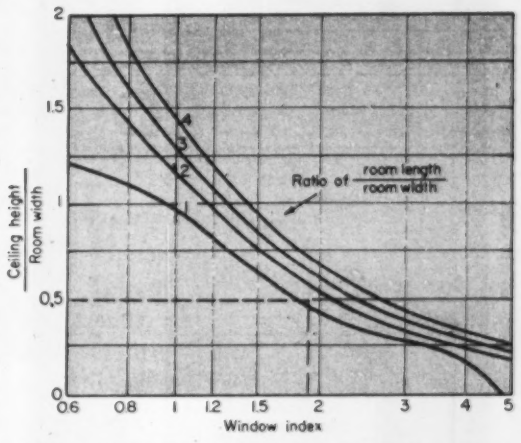


FIG. 2. FOR GROUND-REFLECTED LIGHT, a window index may be found from the above curves for computing light intensities in a room.

How to compute daylighting in a room

A new and relatively simple method of predicting the amount of daylight that will enter a window and illuminate a room is being developed as a result of tests carried out at Southern Methodist University, Dallas, Tex. It is similar to the lumen method for artificial interior lighting (ENR Sept. 7, 1950, p. 43) that is now used by illuminating engineers and building designers.

The new method was outlined in a paper, "A Lumen Method of Daylighting Design," at the National Technical Conference of the Illuminating Engineering Society in September. The authors were R. L. Biesele, Jr., then research professor of engineering, Southern Methodist University, now engineering vice-president, Toff Corporation, Dallas, Tex.; W. J. Arner, of the research department of Libbey-Owens-Ford Glass Co., Toledo, Ohio; and E. W. Conover, of the research department of Detroit Steel Products Co., Detroit, Mich.

Because of the large number of variables, an analytical solution appeared impracticable; so the authors developed the method empirically. To evaluate the basic factors they carried out an extensive test program on a quarter-size model on which all the conditions needed for the study could be reproduced.

The tests reported in the paper include only those applying to clear glass windows set vertically in one wall, running without major breaks the full length of the wall and extending from a normal sill of 30 to 42 in. to a window head less than 12 in. below the ceiling.

Test results summarized in the accompanying charts make possible the prediction of daylight distribution in a room. Fig. 1 and 2 give a "window index" for light from the sky alone and for light reflected from the ground. Similar to the "room index" used in the lumen method for artificial lighting, the window index takes into account the effect of room geometry.

The other charts give the minimum, maximum and average illumination coefficients for clear, overcast and uniform sky brightness patterns, and for ground brightness. These coefficients are defined, respectively, as the ratio of minimum, maximum and average work-plane lumens to the lumens incident on the nominal window area.

When the coefficients are known, the work-plane illumination in footcandles (lumens per sq ft) can be determined by multiplying the coefficients by the number of lumens incident on the windows and dividing by the area of the floor, or the work plane. The result should be corrected for loss of light in transmittance through the glass (the factor is 0.8 for diffuse incident light through clear flat glass); for losses due to obstructions (ratio of clear window opening to masonry opening is 0.8 for typical metal-window construction); and for losses due to dirt collecting on the glass between cleanings.

• **Example**—Here's how the average, minimum and maximum illumination might be computed for a 30x24x12-ft classroom, with reflection factor of 85% for the ceiling, 70% for the walls and 30% for the floor. Metal windows glazed with clear glass extend the full length of one 30-ft side of the room, between a 42-in. sill and the ceiling. (Window area equals 8.5 × 30, or 255 ft; height to center of windows is 7.75 ft; glass transmittance factor is 0.8; window-opening ratio is 0.8; and the maintenance factor is taken as 1.0.)

Assume a clear sky producing 300 ft-c on the vertical windows. Assume also a sun position and ground reflectance such that light from ground reflections produces 200 ft-c, making the total illumination incident on the vertical windows 500 ft-c.

The first step is to determine from Fig. 1 the window index for light from the sky. The chart is entered with the ratio of height of center of windows above the floor to room width, 7.75/24, or 0.32. For a ratio of room length to room width of 30/24, or 1.25, a window index of 2.2 is found.

The illumination coefficients can now be obtained from Fig. 3. For the reflection factors given, these values are determined by the D curves. Corresponding to a window index of 2.2, the average illumination coefficient is 0.80; the minimum 0.50; and the maximum, 1.35.

Hence, the average work-plane illumination from light from the sky alone will be

$$\frac{300 \times 255 \times 0.80 \times 0.8 \times 0.8 \times 1.0}{30 \times 24} = 54 \text{ ft-c.}$$

The minimum work-plane illumination from light from the sky alone will be 54 × 0.50/0.80, or 34 ft-c. The maximum will be 54 × 1.35/0.80, or 92 ft-c.

Similarly, the window index for ground light is found from Fig. 2 to be 1.9. Fig. 6 gives the average illumina-

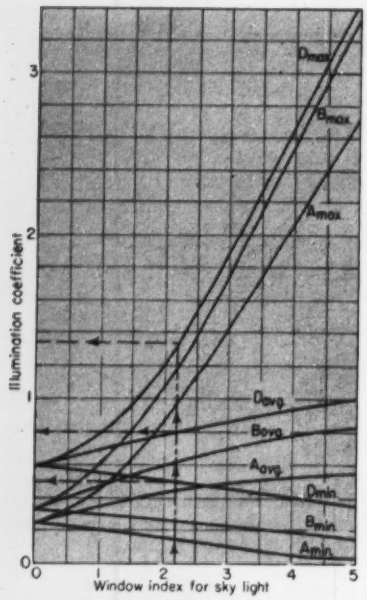


FIG. 3. FOR A CLEAR SKY, the curves determine illumination coefficients. Curves A are for a reflection factor of ceiling of 4%, walls 4%, floor 4%; B for ceiling 85%, walls 30%, floor 30%; and D for ceiling 85%, walls 70%, floor 30%.

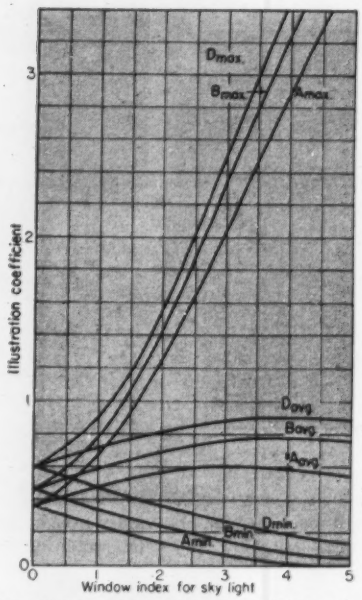


FIG. 4 FOR AN OVERCAST SKY, this chart gives the minimum, maximum and average illumination coefficients. Curves A, B and D are for the same reflection factors for ceiling, walls and floor as for Fig. 3.

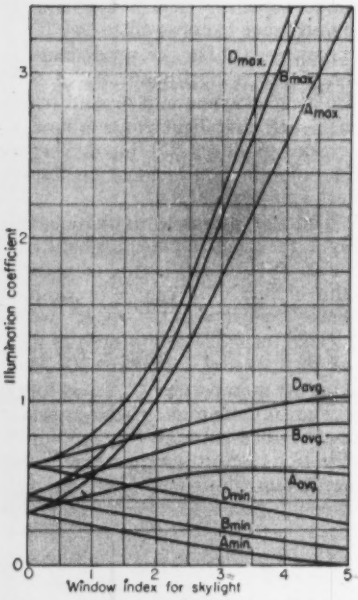


FIG. 5. FOR UNIFORM BRIGHTNESS SKY, illumination coefficients are given by the above chart for the same reflection factors as for Fig. 3. Work-plane illumination is the product of a coefficient and lumens received from the windows.

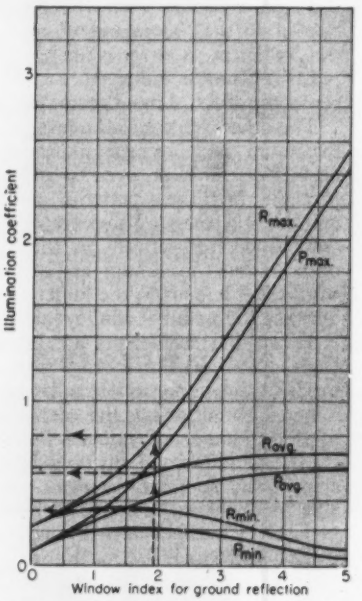


FIG. 6. FOR GROUND LIGHT, this chart gives the minimum, maximum and average illumination coefficients. Curves P are for reflection factor of ceiling of 85%, walls 30%, floor 30%; R for ceiling 85%, walls 70%, floor 30%.

tion coefficient for ground light as 0.56; the minimum as 0.33; and the maximum as 0.80. The resulting average work-plane illumination, then, will be

$$\frac{200 \times 255 \times 0.56 \times 0.8 \times 0.8 \times 1.0}{30 \times 24} = 25 \text{ ft.-c.}$$

The minimum work-plane illumination from ground light will be $25 \times 0.33/0.56$, or 15 ft-c. The maximum will be $25 \times 0.80/0.56$, or 36 ft-c.

Combining the illumination from sky and ground gives for the average, 79 ft-c; for the minimum, 49 ft-c; and for the maximum, 128 ft-c.

Flood control ends fears, boosts industrial building

The direct relationship between flood control and industrial and commercial development was emphasized at the annual meeting of the Mississippi Valley Flood Control Association in New Orleans recently.

The association was told that the basic reason for prosperity in the Mississippi Valley was that the fear of recurring floods had vanished, encouraging capital investment.

This assertion was made by Brig. Gen. Peter A. Feringa, president of the Mississippi River Commission, and echoed by Brig. Gen. C. H. Chorpening, Assistant Chief of Engineers for civil works for the U. S. Army Engineers.

• **Accomplishments reviewed**—The speakers reviewed flood control accomplishments which followed passage of the Flood Control Act in 1928, the year after the disastrous Mississippi River Flood.

Progress in the region was cited by Chorpening. He said:

"Waterborne commerce on the lower Mississippi River has grown from 18,000,000 tons in 1928 to the amazing volume of 70,000,000 tons."

Analyzing the vast flood control program, Feringa told the association that of a total of 1,599 miles of mainline levees, 1,277 are up to grade and section.

"Our cutoffs," Feringa said, "have been complete, and operative for the past 19 years. Our floodways are nearly complete. The Morganza control structure will be operative this coming winter. Four of our five reservoirs are complete, and the last one, Grenada, will be complete next fall.

"Of the 450 miles of revetment, 271 are in operation. The Little River levees are nearing completion. The Birds Point-New Madrid area is in a new era of prosperity due to our work. The Cairo floodwalls and levees are practically up to the prescribed grade and section."

• **"False economy"**—Rep. Otto E. Passman, of Louisiana, president of the association, said:

"It is false economy to reduce the annual appropriation of $75 million for flood control."

Passman said the authorization for the continuing flood control plan for the Mississippi Valley was $1.3 billion and that Congress over the last 24 years had appropriated about $813 million.

"About $500 million more will be needed to complete the authorized projects in the lower valley," according to Mr. Passman.

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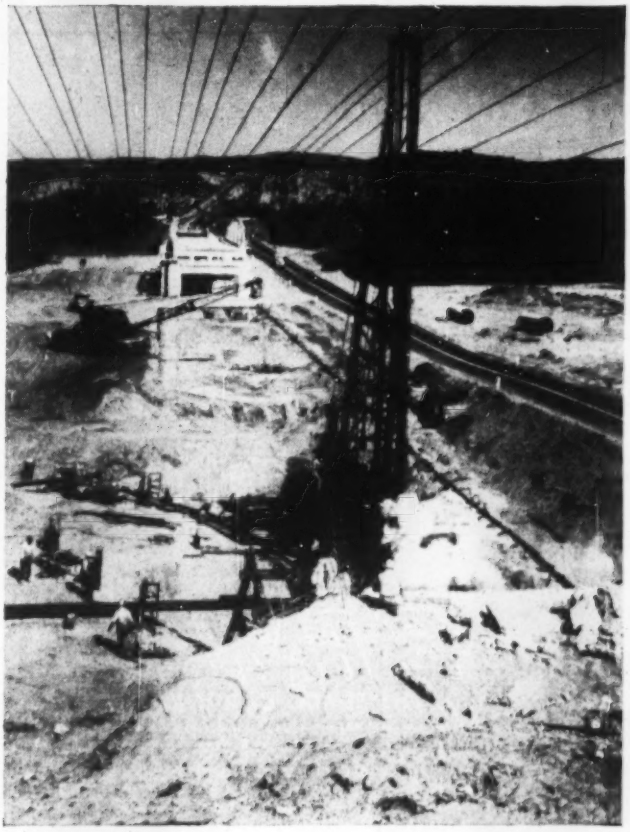

Note sequence of operations after dewatering —Piledriver follows excavating equipment with no time loss.

Trestle over the Santa Ynez River north of Lompoc, Calif. on Route 1 Calif. State Highway was washed out during recent floods, the normal heavy traffic being detoured (right of top Picture). Soil conditions encountered were medium to fine sand strata, fully saturated to natural grade. Removal of old piers and construction of a new bridge was required and needless to say "time was the essence of the contract".

The contractor Madonna Construction Co. of San Luis Obispo, Calif. dried the entire working area by surrounding it by a STANG Wellpoint System. Excavation for removal of old piers and for the new work was accomplished in DRY earth without the use of sheeting and bracing, resulting in LOWER COSTS—SHORTER TIME.

Removal of wrecked abutment and excavation for the new ▶

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PROSPERITY IN THE USA: How Wealthy Are We?

Again, how prosperous *are* the people of the United States?

This is the third of a series of messages devoted to this crucially important and much-debated question. The first two messages dealt with what has been happening to our national income, both in terms of its growth and how it is divided among individuals.

This third message deals with what has been happening to the resources—factories, farms, mines, and equipment of all kinds—out of which income is created. It deals with what economists call our wealth.

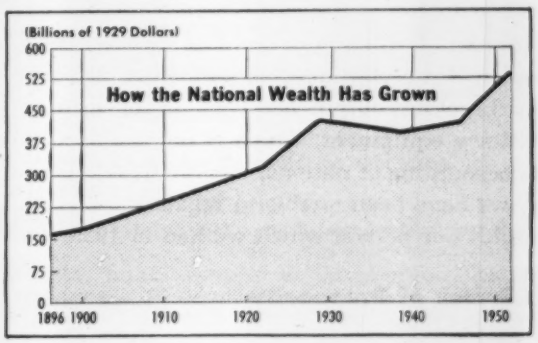
It is possible for a nation to enjoy apparent prosperity for a time by rapidly exhausting its resources. But to sustain prosperity over the long pull a nation must see that its wealth is not dissipated. Hence what is happening to our wealth now is a harbinger of what is going to happen to our prosperity later on.

How Wealth is Measured

It is often asserted that the most vital element in a nation's wealth is its people. There is a lot in this idea. For example, the full value of a country's hospital and surgical equipment depends on its physicians and their skill in handling the equipment.

However, no one has ever devised a satisfactory way to put a value on human beings. So people are omitted from calculations of national wealth. So, too, is military equipment. It is regarded as basically destructive and hence not a real addition to wealth. Otherwise, the wealth of a nation is calculated in terms of the dollar value of its physical resources.

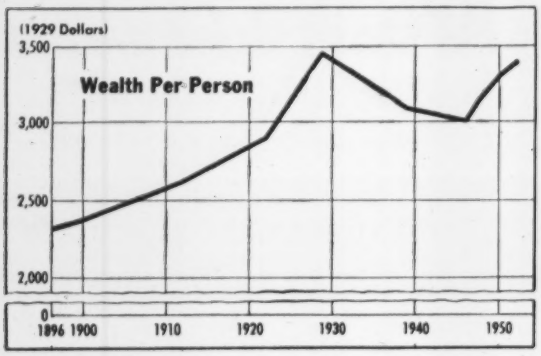
The following chart shows the wealth of the U.S.A. at various intervals during the past 50 years. For the period through 1948 the figures come from a pioneering study by Raymond Goldsmith of the National Bureau of Economic Research, which is widely regarded as the foremost organization in its field. The figures since 1948 are estimated. To remove the effect of price changes, all of the wealth figures are calculated in 1929 prices.



From this chart one fact stands out clearly. It is that since 1929 our national wealth has not been increasing as steadily as it did during

earlier periods. Indeed, in 1946 our total national wealth was actually less than it was in 1929. Only in the last six years have we been able to make any consistent additions.

Even these gains are less impressive when the growth in our population is taken into account, as illustrated by the following chart.



This chart makes it clear that when the nation's wealth is divided by the population, we are slightly worse off per person today than we were in 1929. This is the case in spite of the large additions to our national wealth since 1946.

Depression and war are the two principal reasons we have made no progress in increasing our wealth per person since the 1920s. The depression brought mass unemployment and greatly reduced production which ruled out any increase in wealth. During World War II and again during the post-Korean mobilization program, U.S. production has reached new peaks. But a considerable portion of this record breaking output has been in the form of military equipment, which is not included in an accounting of national wealth. Consequently, we have been unable to regain the level of wealth per person which we had in 1929.

A Brake of Prosperity

What does this failure to raise our wealth per person mean? It means that we have fewer resources with which to create income for each individual. It means that we have made no progress in the crucial task of assuring future increases in prosperity.

As the second editorial in this series demonstrated, we have gone so far in equalizing individual incomes that "the possibilities of increasing the income of the rest of the people by 'soaking the rich' have largely disappeared." From now on the only promising way to increase our individual incomes is to increase our national earning power.

During the past four years it has taken about $3.60 of national wealth to yield $1 of income after taxes. This is a low figure for the wealth needed. Prior to World War II there were long periods when it took at least $5 of national wealth to produce $1 of national income. The experts in this field are by no means certain that it will not again take $5 rather than $3.60 of wealth to increase income by $1.

But let us assume that $3.60 of wealth will suffice to provide $1 of income in the years ahead. If by 1960—seven years from now—the income of the average American is to be increased from about $1490, where it stands at present, to $2000, we must add $310 billion to the national wealth. This is nearly three times as much as we have added to our wealth since the end of World War II, seven years ago.

Because we have made large additions to our productive equipment in recent years, fears are frequently expressed that we shall soon be plagued by an excess of such equipment. But the facts about our national wealth do not support this conclusion. They indicate that we still have ahead of us a tremendous job of increasing our resources if the American standard of living is again to resume the steady climb which was interrupted by depression and war.

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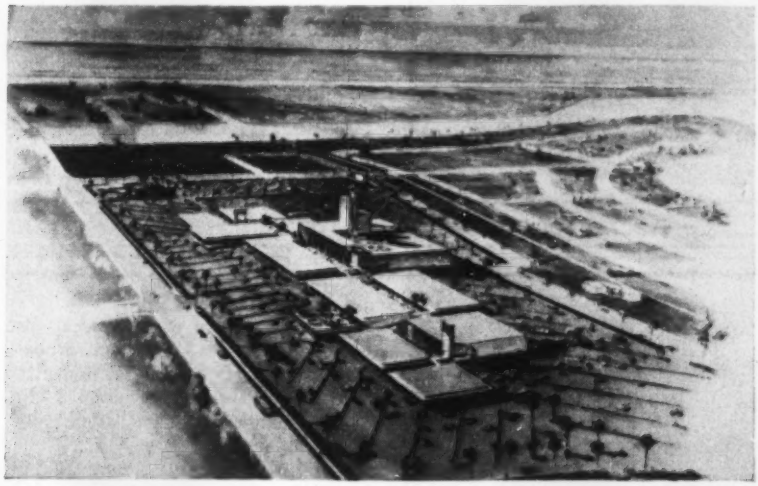


SUNRISE CENTER, year round shopping center in Fort Lauderdale, Fla., is typical of many such groups now under way.

$35 million in shopping centers planned for Twin Cities area

Other plans for large shopping centers are reported from cities in Florida and Ohio

Four large shopping centers for Minneapolis and St. Paul, Minn., to be built at an estimated aggregate cost of $35 million are in the planning stage.

Here are the projects:

- $10-million shopping and residential development area in Richfield, Minn., to be known as Southdale Center. The project is to be built by the Dayton Co., largest department store in Minneapolis.
- $10-million shopping center in Richfield, with a branch store of L. S. Donaldson Co., another Minneapolis department store, as the central unit.
- $10-million shopping center on a 153-acre tract in Roseville, suburb of St. Paul, with the St. Paul Golden Rule Department Store branch as the central unit. Both Donaldson and Golden Rule are owned by Allied Stores Corp., of New York City.
- $5-million shopping center in Richfield, with the J. C. Penny Co. occupying the main unit of a project which will include 32 other stores. This center is to be known as the Hub Shopping Center. George Becker of Minneapolis is the architect.

• **Most progress**—The Hub project is further along in planning than the other three. Henry Shanedling & Sons Corp., developers of the project, expect to start calling for bids in February or March, with ground breaking scheduled for next spring.

The Hub Center will be located on a site of about 18 acres. The Penny store will occupy about 50,000 sq ft.

General plans for the Donaldson and Golden Rule centers call for each center to have a four-floor structure for the main stores. In addition there will be about 75 other retail shops, in each project. The Golden Rule site will have parking for 5,000 autos.

B. E. Puckett, chairman of Allied Stores Corp., said that St. Paul and Minneapolis are included in five metropolitan areas which his firm believed held the greatest promise of suburban development. Shopping centers already opened by the firm are: Branch of Jordan-Marsh Co. 17 mi from Boston, Mass., branch of the Bon Marche in North Seattle, Wash.; and branch of Maas Bros. outside of Tampa, Fla. The company this year acquired a 100-acre site in northern New Jersey for a branch of Stern Bros., New York City.

The Dayton Southdale center will be finished in May, 1955. The project was designed by Victor Gruen, architect of New York City, who is active in shopping-center design.

Fort Lauderdale center

Plans to develop a major regional shopping center in Fort Lauderdale, Fla., have been announced by Robert E. Simon, Jr., head of a group of investors in New York City, who intend to back the project.

The Antioch College Foundation, owners of the land, are leasing for a long term of years about 43 acres for the erection of the center.

Ground for the project will be broken in March, 1953. It is anticipated that the buildings will be ready for occupancy in November, 1953.

Planning calls for an initial construction program of five major buildings grouped around a central mall containing service areas and covered walkways and surrounded on all sides by paved lighted parking areas. The stores will be known as the Sunrise Shopping Center.

Population in the area of the center is expected to be about 160,000 by 1955, at the present rate of growth. The immediate area of the center is being rapidly developed for residences, apartments and hotels, making for a large trading area.

One of the features of the center will be a building of 30,000 sq ft containing a group of smaller shops trade-marked as Sunrise Village. It will be comparable with the Farmers Market in Los Angeles.

The architects and engineers for the project are Gamble, Pownall & Gilroy of Fort Lauderdale, Fla.

Store and warehouse

The way was cleared, except for acceptance by the owners, for the construction of a $15-million store and warehouse in Columbus, Ohio.

Sears, Roebuck & Co. will begin construction soon on the 36-acre tract. It was predicted by observers that the work would be completed by early 1954.

Eugene Van Cleef, regional planning commission member, described a traffic-flow plan which was tentatively accepted by the planners. The plan would ease autos and trucks into and out of the lot which will contain parking facilities for 7,500 autos.

Van Cleef's plan would place two overpasses at vital exit spots to prevent cross-traffic jams.

No definite construction date had been set, but permission would be granted as soon as Sears officials agree to the traffic plan.

REMOVING of old middle wall of Lock No. 2 at Braddock, Pa. New riverward lock at the left. Landward lock (right) will be completed this year.

$8-million lock job progresses

Landward lock of twin lock job on the Monongahela will be completed in the fall by Dravo Corporation

Dravo Corp., Pittsburgh, Pa., expects this fall to finish reconstruction of the landward lock of Lock No. 2 on the Monongahela River at Braddock, Pa.

Measuring 110 ft wide by 720 ft long, the new chamber will accommodate 13 one-thousand-ton capacity coal barges and a towboat. The old locks could handle only four barges, so the standard tows of six barges and towboat had to be broken up for "double locking," a time consuming process.

Reconstruction of the twin locks at Braddock by Dravo is supervised by the Corps of Engineers. The job was handled in two contracts, the first covering construction of a $7-million riverward lock (ENR Oct. 19, 1950, p. 34). This was completed in June, 1951, and work on the $8-million landward lock was then started.

The project was complicated by the necessity for maintaining uninterrupted river traffic 24 hours a day while the new locks were under construction.

• **Construction**—The old lock walls were built on timber piling. The new walls rest on a concrete foundation on solid rock 50 ft below the upper pool river level.

To erect the walls, Dravo had to encircle the working area with a cofferdam of sand and gravel-filled cells, up to 54 ft in dia, made of steel sheet piling. A portion of this cofferdam served as a temporary arm of the river dam to help maintain the upper pool. It is this "reservoir" of water in the pool which protects—not only the necessary channel depth for navigation—but equally important, provides sufficient water for the industries lining the river banks.

For some months now Dravo workmen have been placing concrete for the new land wall which is 42 ft wide at its base. From rock, it is as high as a five-story building. The wall is 1250 ft long and has guide walls extending an additional 873 ft upstream and 485 ft downstream.

The amount of concrete required for the new twin locks was about 211,000 cu yd.

Major phases of the project remaining to be completed include: construction of the gate sills at the upper and lower end of the new lock; placing of the concrete floor; construction of a settling basin for mill wastes at the end of the lower guide wall; and removal of the middle wall of the old lock.

New Pittsburgh bridge is in planning stage

Construction of a new Allegheny River bridge for Pittsburgh this year seems assured with completion of plans from the Pennsylvania Department of Highways for relocating state routes.

Officials disclosed that planning and designing are under way for a new 62nd Street Bridge over the river in the Sharpsburg-Etna area of Pittsburgh. The Sharpsburg-Etna district is considered the worst traffic bottleneck in Allegheny County.

The new bridge will connect with Butler Street in Pittsburgh proper. Construction of the first section of relocated state highway Routes 8 and 28 is scheduled to begin some time this summer.

Allegheny County Commissioners have obtained the services of a firm of New York consulting engineers—Parsons, Brinkerhoff, Hall and Macdonald—to work with the county's Works Department in preparing plans, designs and specifications for the new span.

The new bridge will replace an antiquated structure now in use. But before bids can be taken for actual construction the county must obtain approval of its plans from the U. S. Army Engineers, the state Public Utility Commission, the state Water and Power Resources Board and the state Art Commission.

Opening of the western extension of the Pennsylvania Turnpike brought pressure for a new bridge, since Route 8 connects with the turnpike.

Los Angeles housing fight hits redevelopment agency

Los Angeles Mayor Fletcher Bowron last week announced appointment of three new members to the Community Redevelopment Agency in a move to quiet its voice in the controversy over the city's $110-million housing project.

New appointees are William Millerburg, building contractor and director of the National Association of Home Builders; Paul Robinson Hunter, architect, and Dwight L. Clarke, retired insurance company executive and banker.

The appointments followed resignation of two men who had figured prominently in the housing squabble—builder Milton J. Brock and City Housing Authority Director Howard Hotzendorf.

CRA is set up for slum clearance and to sell the cleared land to private enterprise for carrying out much needed improvement.

Largest housing project okayed for New York City

New York City's largest slum clearance and low-middle income housing redevelopment plan got the go-ahead order last week as final approval for the start of the Morningside-Manhattanville housing project was announced by the Public Housing Administration.

The combined low-rent public and middle-income private housing development, estimated at more than $40 million, will cover eight blocks on some 25 acres in the Morningside area.

First to be constructed will be the new low-rent public project, General Grant Houses, on a 6-block 16-acre site north and east of Columbia University. This group of ten 20-story elevator apartments will accommodate 1,950 low-income families.

In a two-block area nearby, a private cooperative development of six 20-story buildings for about 1,000 middle-income families will be erected.

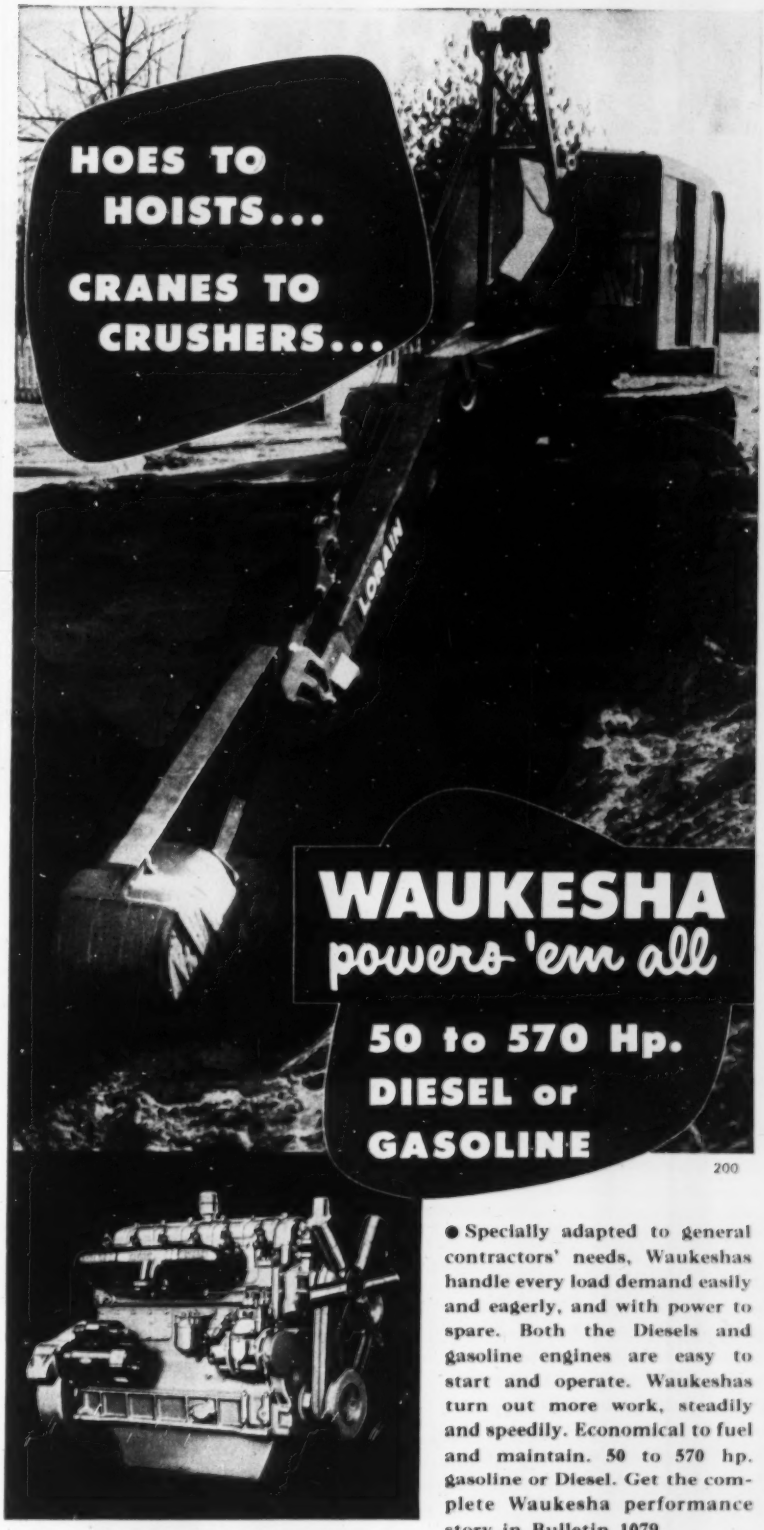
• **Physical features**—In the General Grant development, ten buildings, covering only 12 percent of the land area, will be laid out in a 2-block curve. Of reinforced concrete construction with brick exteriors, the houses will contain apartments of one to four bedrooms. A preponderance of multi-bedroom apartments will fill requirements of families with children.

Recreation rooms, incinerators and automatic laundries are to be provided for common use. Elimination of several cross streets in the area will permit the inclusion of parks, playgrounds and off-street parking areas for tenants.

First of a dozen proposed new housing developments in the city, the Morningside-Manhattanville plan was initiated five years ago by Morningside Heights, Inc., an organization of leading representatives of fourteen colleges, universities, hospitals and churches located in the neighborhood.

With construction costs estimated at less than $10,000 per unit, expected land and site preparation costs have brought about two changes in originally conceived plans for the project.

One was in the creation of 400 additional apartments; the other, elevation of structural height to 20 stories. General Grant houses will be built under Title III of the Housing Act of 1949, and its adjoining cooperative middle-income neighbor under Title I.



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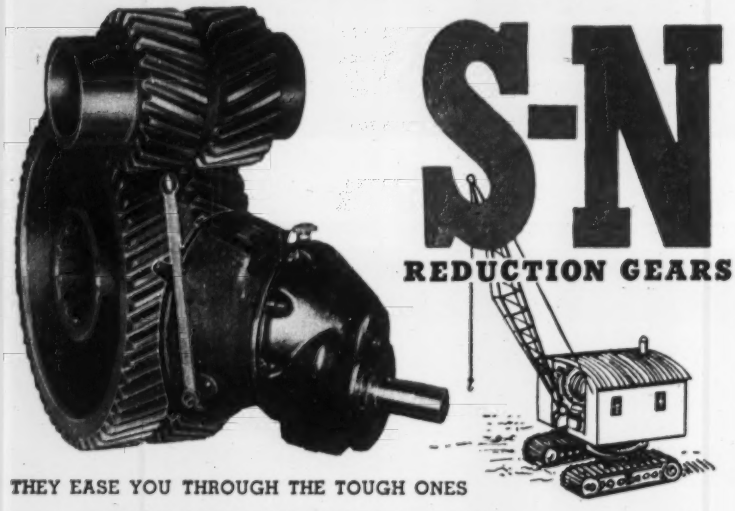

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MUNICIPAL

Council stops contractor from blasting in sewer job

Picketing housewives and home owners, complaining of cracks in their plaster, have brought a halt to construction of a $750,000 storm sewer in Euclid, Ohio.

Last week the Euclid city council ordered National Construction Co., Cleveland, Ohio to stop blasting

National Construction previously had blasted some 400 ft of the 4,000-ft sewer. Using dynamite, the company was blasting a tunnel through shale about 30 ft underground. Charles Reyner, secretary of the company, said other methods are being sought to finish the job.

Reyner said that the trouble arose as much from noise as from damage. He reported that when his men made a test by setting off half a stick of dynamite, there was as much complaining "as if we had shot rock."

Seismographic tests showed that most of the blasts were in the safe zone, Reyner asserted. Occasionally, one would creep into the caution zone, he added.

Before the city ordered blasting stopped, National Construction had asked Vibration Measurement Engineers, Chicago, Ill., to survey the situation.

"The experts tell us that if you have cracks in plaster, vibrations will tend to irritate them," Reyner said.

Gagging on water ends

After 10 years and almost $32 million in new water mains, pumping stations and filter plants, Philadelphia's water has met U. S. Public Health Service standards.

Philadelphia's water in the past—whether good, bad or indifferent in the mouths of residents—has always been newsy. This time is no exception.

Water Commissioner Samuel H. Baxter ruined one of radio and TV comedian Milton Berle's best jokes and earned government approval by killing off a lot of assorted bacteria in Philadelphia water.

"Just heard the good news," Berle wired Baxter, "that at last you have water fit to drink. Congratulations. This is great for your local citizens, but it rains one of my oldest and most favorite gag targets."

The government has the right to pass on Philadelphia water because it's used on airplanes and trains in interstate commerce. Approval since 1945 has been only tentative.

St. Louis' public agencies seek legislative action

A 19-man board of freeholders appointed to draw up a charter for a metropolitan sewer district to serve both St. Louis and St. Louis County began its one-year task last week. The plan must be submitted to the voters of the city and county in separate elections not more than 90 days after it is filed with election officials.

A boundary fixed since 1876 confines the city so that the growing population has spilled over into the county on the north, west and south. The result has been the growth of 36 cities and 56 towns and villages, mostly contiguous with St. Louis, served by a variety of sewer facilities.

• **Development**—In another move toward integration of area-wide facilities, the Bi-state Development Agency announced it would renew its efforts in the Missouri and Illinois legislature to obtain broader powers, including specific authority to operate mass transit facilities.

Under identical bills, to be introduced in the two legislatures, the agency would be given the right to acquire, plan and operate "passenger transportation facilities," as well as build and operate or lease warehouses, grain elevators, bridges, tunnels, airports, wharves, docks, harbors, sewage disposal plants, parking facilities and terminals.

Present statutes give the agency authority only to "make plans" for most of these facilities. But the agency has gone ahead with plans for a wharf and freight terminal at Granite City, Ill. The agency has also announced its intention to build and operate a $9.5 million underground parking garage on the St. Louis underground parking garage on the St. Louis waterfront. The Bi-State body is modeled after the Port of New York Authority.

Other powers sought in the new bills include the specific right to condemn private property needed for developments, and the power to contract with political subdivisions for use of Bi-State facilities.

Much of the rest of the proposed legislation refers to financial powers needed for sale of private bonds. All Bi-State projects must be self-sustaining, paid for out of revenue without recourse to tax support.

Leif Sverdrup, agency chairman and member of the consulting engineering firm of Sverdrup & Parcel, said the Bi-State group does not now contemplate seeking control of streetcar and bus operations.

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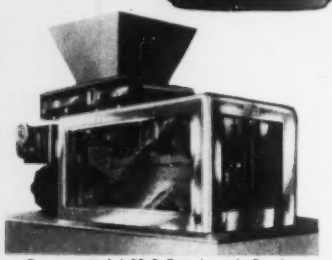

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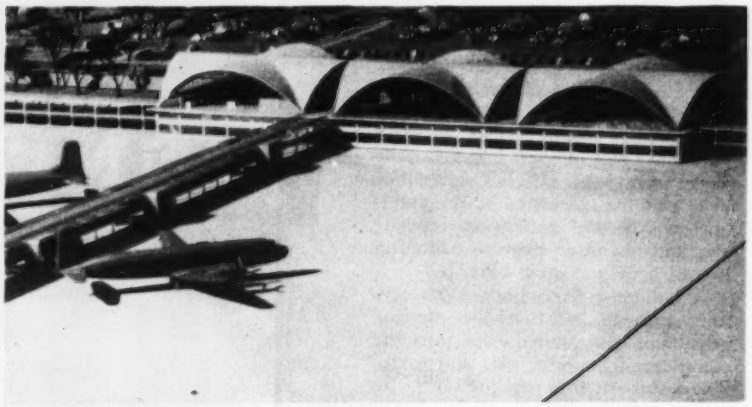

UNUSUAL ROOF DESIGN of intersecting barrel arches of thin-shell reinforced concrete are featured in this proposed terminal for St. Louis, Mo., airport.

Airport terminal building bids sought

Unusual roof design is a feature of the structure which is part of a $7-million program of expansion

Construction of a new $3.8-million terminal building at the St. Louis, Mo., municipal airport has been authorized by the Civil Aeronautics Administration and bids will be sought early in February, it was announced two weeks ago by Director of Public Utilities Conway B. Briscoe.

Present plans call for a start of construction this spring, and the job is expected to take 18 months.

The building is part of a $7-million program to expand Lambert-St. Louis Field, 15 mi northwest of St. Louis.

• **Terminal building**—The three-level building, of reinforced concrete with a glass wall facing the field and a brick wall on the opposite side, will be 438 ft long, initially. Eventually it is to be extended to double that length.

An outstanding feature of the structure is the roof, which will be composed—at first—of three units, each formed by two intersecting thin-shell reinforced concrete barrel arches, which will have a span of 120 ft and a rise of 32 ft.

Each of the roof shells, poured as a unit, will be of 3,000-psi reinforced concrete, 4½ in. thick. At the perimeter, there will be a stiffening rib.

Present plans call for insulation over the shell, topped with copper sheeting. Acoustical plaster is to be used on the underside of the roof shell.

Chief supporting members for the shell roofs will be two diagonal 170-ft ribs, to be 18 in. wide and five ft in cross-sectional depth at the top of the arch, increasing in depth toward the foot of the arch. The ribs will project above the roof surfaces, except near the supports, where they will pierce the shell and terminate on top of steel columns near the third floor level. Ribs will be pinned at supports.

• **Bracing at floors**—The supports at the third-floor level are four steel columns spaced 120-ft apart. A 2 x 18-in. horizontal steel band will brace the columns at the top. The brace is designed for a horizontal thrust, on each pin, of 731 kips.

At the second floor level, the steel columns will be braced with horizontal reinforced concrete struts. Each steel column will be supported on a reinforced concrete column.

Between each roof unit, the two curved, pie-shaped spaces will be enclosed by glass on the outside and a translucent plastic underneath.

• **Interior features**—Entrance to the terminal from the parking lots will be on the top floor level.

A second floor concourse will open onto finger ramps providing elevated, covered walkways to 16 gate positions. (Ultimately 28 gate positions.)

• **Engineers and architects**—William C. E. Becker is structural engineer on the project. Architects are Hellmuth, Yamaski & Leinweber, St. Louis. Consultants for roof construction are Roberts & Schaefer of Chicago, Ill. Landrum & Brown of Cincinnati, Ohio, airport consultants, also have been retained by the city.

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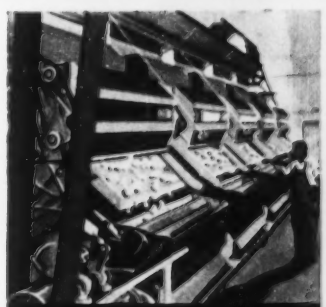

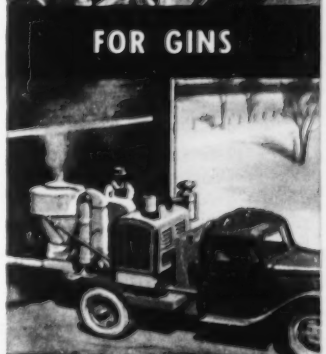

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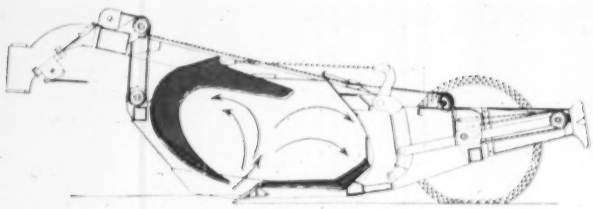

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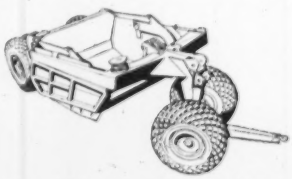

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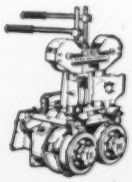

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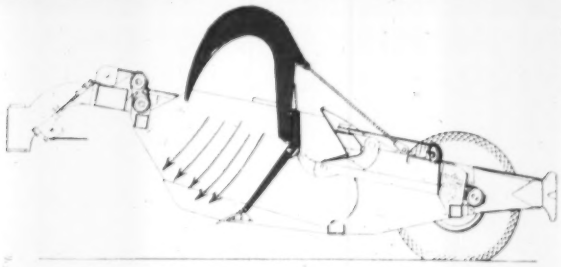

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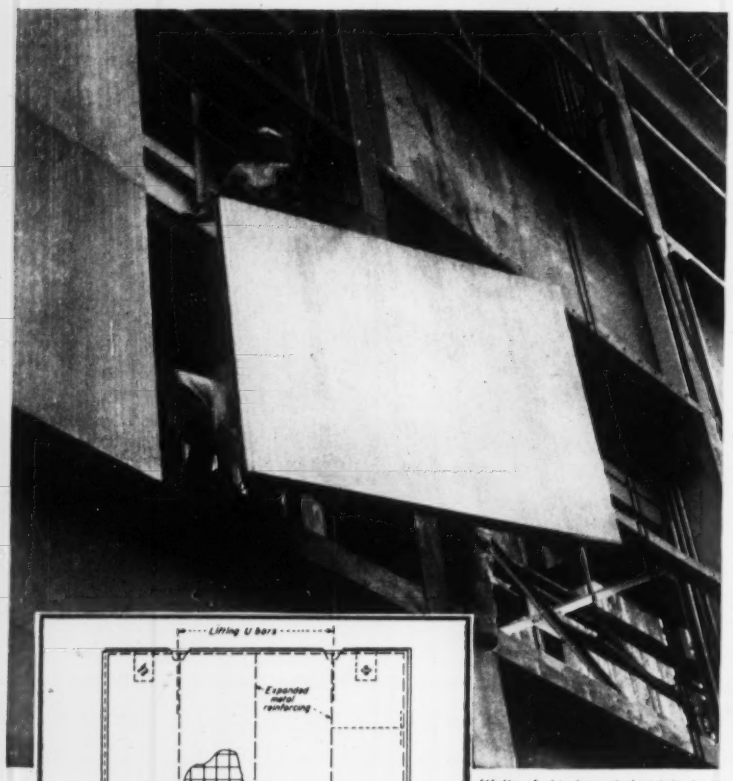
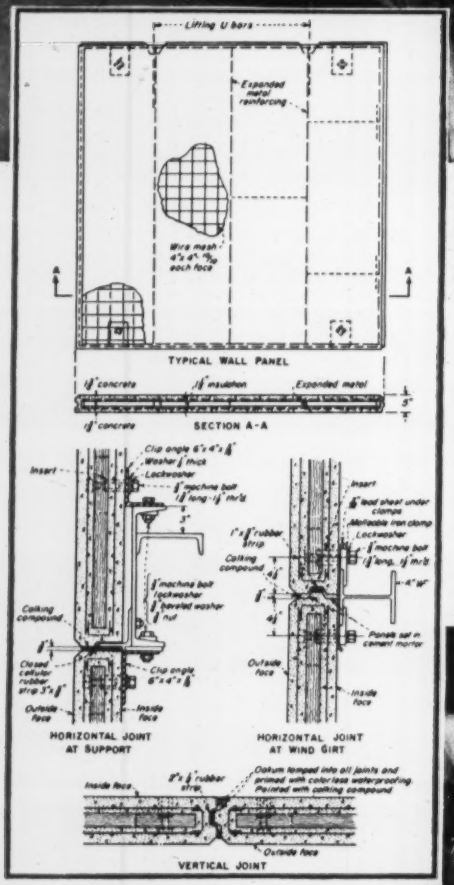


Walls of this huge industrial plant were erected at the rate of five 8' x 10' panels an hour, at a completed wall cost of approximately $2.25 to $2.50 per sq. ft. Cost varies slightly depending on shipping distance from plants, standardization in panel sizes, etc.



Above: Wall panel details show panel construction and method of joining slabs. Courtesy of Ford, Bacon & Davis, Inc.

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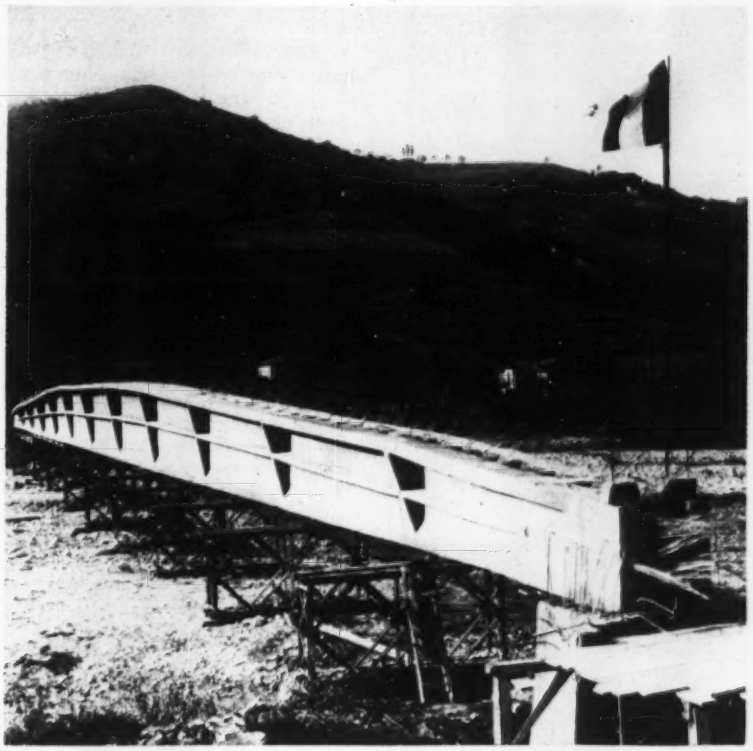


CONCRETE GIRDER, simply supported, spans 230 ft over the Samoggia in Italy.

Prestressed girder sets new record

Giuseppe Rinaldi, director of the Office of Public Works of the Province of Bologna, Italy, set out last year to design and build the world's longest simply supported prestressed concrete girder. He succeeded.

The girder spans 230 ft, center to center of supports. That makes it 15 ft longer than the previous record-holder, a 215-ft simply supported prestressed concrete girder in France, which was designed by Eugene Freyssinet.

• **One-girder bridge**—The new girder, which weighs 150 tons, is the sole supporting member of a footbridge over the Samoggia torrent at Mongiorgio, near Bologna. An unsymmetrical I in cross section, it varies in depth from 3 ft 4 in. at the ends to 8 ft 4 in. at midspan. The top flange, which carries the walkway, is 40 in. wide and 8 in. thick. The bottom flange is 16 in. wide and 8 in. thick. The web is 6½ in. thick. It is stiffened by a longitudinal rib at mid-depth and by vertical diaphragms at 20-ft intervals.

Prestress totaling 770 tons is maintained with 34 cables. Each cable consists of twelve 0.2-in. dia wires, which were tensioned initially to 155,000 psi. With losses due to friction, shrinkage and plastic flow assumed to be 35,000 psi, the working stress is 120,000 psi.

The cables are curved longitudinally in the girder to form a parabola. Ten are anchored in the top flange, the remainder in the ends of the girder. The girder is also reinforced against wind load with two angles and several bars in the top flange.

The bridge was designed for a live load of 80 psf and a wind load of 18 psf. Maximum working compressive stress in the concrete is 2,350 psi, in the top flange, and the minimum is 280 psi, in the bottom flange.

The structure was built under the supervision of Mr. Rinaldi by the Bricklayers Cooperative Association of Imola, which submitted a bid 2½% lower than the nearest competitive bid. This firm was awarded the contract, although it had never been employed on a reinforced concrete project before. Cost of the bridge was $9,000.

• **Austrian hydropower**—Three Swiss electric power companies (including Brown Boverie et Cie) have started discussions of plans advanced by French and Austrian agencies, for developing hydro power stations in the Austrian Tyrol. The scheme might have a potential of two billion kilowatt hours of energy, at prices considerably lower than present French generating costs.

• **Olympic stadium**—Australian officials, planning for the 1956 Olympic games to be held in Melbourne, have selected Australian Architect Frank Heath as winning designer of a $3-million stadium to house the main Olympic events. The stadium will accommodate 125,000 spectators in a reinforced concrete bowl. Contract for the work has been let to Ernest A. Watts, Ltd., Australian contracting firm.

International briefs . . .

• **Highway program active**—Construction of three large suspension bridges is under way in Colombia, marking a substantial step forward in the country's four-year highway building program. First of three bridges, all built by the United States Steel Corp., is a 863-ft span over the Magdalena River on the Bogota-Armero highway. The second, 364 ft long, crosses the Saldana River on the Giradot-Guano-Saldana highway. The third, over the Cuaca River on the Medellin-Quibdo highway, is 689 ft long.

• **Japan needs houses**—Japan's Construction Ministry estimates that more than 3 million houses are needed to relieve the country's housing shortage. In 1953, the ministry plans to build 95,000 publicly-financed houses and 67,000 houses financed through Housing Finance Bank loans. To meet the housing needs, the ministry estimates that more than 1,000,000 houses must be built in the next three years.

• **Delay hydro project**—Construction plans for the proposed $30-million Fort a la Corne power project in northern Saskatchewan may be shelved, according to provincial officials. Main factor delaying immediate construction is the possibility of increased discoveries of natural gas, making the hydropower scheme unnecessary.

A. O. QUINN, newly elected president of the American Society of Photogrammetry.

Photogrammetry society elects head

Newly elected president has had a varied career in civil engineering and photo mapping

Alfred O. Quinn was elected president of the American Society of Photogrammetry, last week. Arthur C. Lundahl and John I. Davidson were elected first and second vice-presidents at the meeting in Washington, D. C.

The new president of the nation's air map-makers began his engineering and mapping career in 1936 with the Tennessee Valley Authority, as an engineer in its maps and surveys division. Quinn was associated with the authority until 1943, when he entered the U. S. Navy.

He saw service in the Pacific as a Photo Intelligence officer with amphibious groups. He participated in the landings in the Philippine Islands, Iwo Jima and Okinawa, and was stationed in Japan for a time. Then, in 1946, he served as assistant to the director of photography for the atom bomb tests at Bikini.

Quinn returned to his native city, Syracuse, N. Y., as Associate Professor of Photogrammetry at the Syracuse University in 1946. He continued in that post until 1950, when he joined Aero Service Corporation, photogrammetric Engineers, Philadelphia, Pa. He heads the engineering and field surveys divisions for that company.

The new president has been a member of the ASP since 1936, and he has served the organization as chairman of several committees, as director and most recently as vice-president.

He has also been active as a member of the ASCE, the American Congress on Surveying and Mapping, Sigma Xi, and the American Geophysical Union.

A graduate in civil engineering of Syracuse University, Quinn holds a law degree from the Chattanooga College of Law. He is a registered land surveyor in the states of New York, Pennsylvania and Washington, and is licensed to practice law in Tennessee.

Quinn is co-author of the text, "Elements of Photogrammetry," with Prof. Earl Church of Syracuse University, as well as the author of numerous articles and technical papers.

• **Society**—Now beginning its 19th year, the ASP has 3,000 members among the government agencies, oil and mining companies, colleges, and commercial mapping companies in the U. S.

Much of the large-scale mapping now being done in the U. S. and a great part of the Point Four mapping of under-developed countries abroad are the work of members of the society.

Pennsylvania contractor named head of association

J. Robert Bazley, president of J. Robert Bazley, Inc., Pottsville, Pa., was elected president of the Associated Pennsylvania Constructors, state-wide organization of Pennsylvania's highway and heavy construction industry, at the association's 31st annual convention in Atlantic City, N. J., two weeks ago. APC is a state-wide organization of Pennsylvania's highway and heavy industry construction industry.

Before his election Bazley had served two years as vice-president of the group. He succeeds William O. Faylor, president of the Middlecreek Construction Co., Middleburg, Pa., who has become chairman of the association's advisory board.

Bazley entered business in Pottsville, Pa., following his graduation from the University of Michigan in 1911. His firm conducts one of the largest coal stripping and road building operations in Pennsylvania.

As a result of his election as president of APC, Bazley will also serve on the board of directors of the contractors' division of the American Road Builders' Association.

Active in civic affairs, Bazley has been president of the Pottsville Hospital, a director of the water company and vice-president of the Miners National Bank.

Waterways experiment chief to join lakes level group

Haywood G. Dewey, Jr., chief engineer, Mississippi Basin Model Branch, Waterways Experiment Station, Corps of Engineers, Jackson, Miss., was presented with a letter of commendation on the eve of his departure for Chicago, Ill., where he has accepted a position with the Great Lakes Division of the Corps of Engineers.

Dewey has been in charge of the Mississippi Basin Model since start of construction in the early part of World War II.

The citation read in part: "The creation of a model of the entire Mississippi River system has been as difficult of accomplishment as it was bold in concept. Under your capable supervision, the model has been advanced efficiently from its initial layout, through complex phases of design and development, and extensive programs of construction, until now, after sustained operation, it has been demonstrated to be a project of complete engineering soundness."

A native of Westminster, Md., Dewey was graduated from Cornell University in 1935, with a BS in CE. Later he received a master's degree at the University of Colorado. He was commissioned a first lieutenant in the Army in 1942 and was transferred to the WES. After separation from the Army in 1946 he continued on this assignment in the role of a civilian.

As a major in the reserves, he was reinducted with the 434th Engineer Construction Battalion as executive officer and served with that unit in Korea.

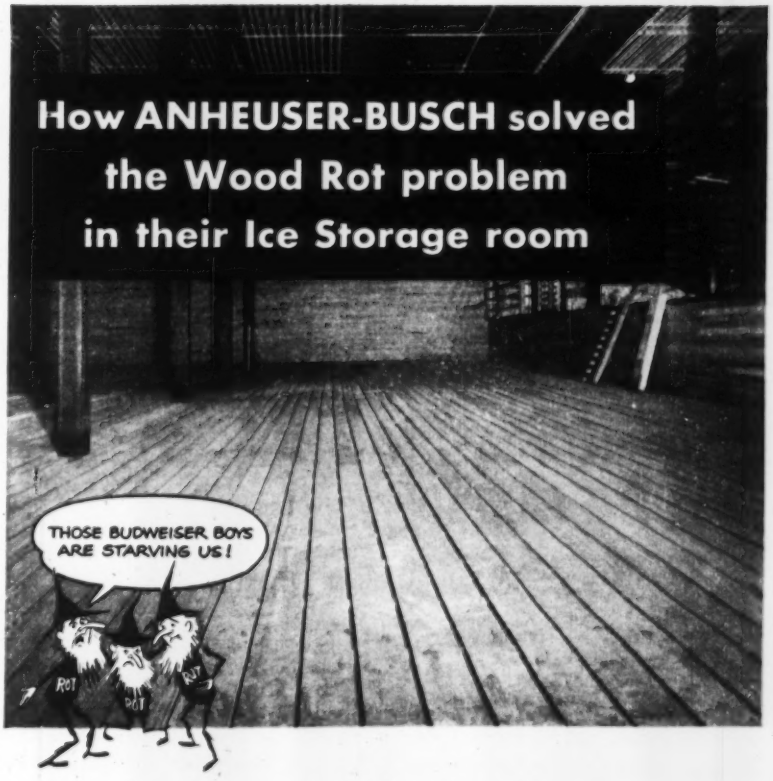
At Chicago, Dewey will have charge of the engineering staff concerned with fluctuating levels of the Great Lakes.

Railroad assistant chief raised to chief engineer

H. A. Aalberg, civil engineer, has been appointed chief engineer of the Chicago, Burlington & Quincy Railroad Co.

He has been assistant chief engineer at Chicago since 1946. Aalberg succeeded Herbert R. Clarke, who retired this month after 45 years of service.

Starting his career with the railroad as a draftsman in Lincoln, Neb., in 1910, Aalberg became division engineer in 1916 and assistant chief engineer at Lincoln in 1937.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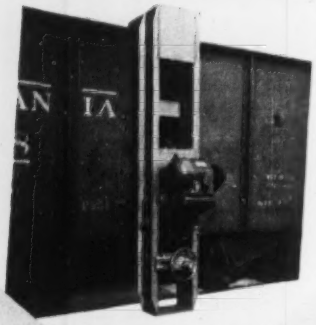

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POLAND EU INC. OHIO

New Florida road board drops about 400 employees

Florida's new road board dropped upwards of 400 employees at its first meeting. This action included a shakeup in the high engineering ranks. The board also deferred a large number of projects, and effected an immediate saving of more than $3 million in expenses.

Richard H. Simpson, the new chairman, indicated that all divisions of the highways department will be given a housecleaning to rid the state of surplus employees and place operations on a cash basis. By next June outgo is expected to equal income.

Auditor W. A. Williams reported that the Road Department has $1 million in cash but there is $5 million due and payable in outstanding bills. And $3 million must be set aside to pay contractors upon final acceptance of work.

As part of the economy move the board has asked contractors to hold open their bids, some as long as six months. Some bids, passed by the old board, are being held up. It is likely that other projects will be delayed and on account of fluctuating costs contractors are likely to be asked to resubmit bids at a later date.

Personnel reorganization includes: Elimination of four assistant highway engineers; abolition of the three-man priorities office; abolition of urban projects office; and other demotions and transfers.

If there are no legal objections the *Florida Highways* magazine will be abolished, although the only expense was the salary of the editor who resigned a short time ago.

To train volunteers in waterworks units

The Federal Civil Defense Administration has announced that a corps of 246,000 volunteers will be trained in installation and operation of waterworks equipment to be stockpiled for emergencies by June, 1953.

Most of the equipment is already stockpiled. It includes pipe, pumps, purification units, chlorinators, and generators. This equipment, stockpiled at 36 locations on the fringe of critical target areas, will be made available to local civil defense groups for training purposes.

Local groups are urged to use the available equipment and to request from FCDA (Washington 25, D. C.) the technical bulletins of instructions which have been prepared for the purpose.

Careers . . .

• **Appointed**—**Edwin A. Rosenstone,** Assistant State Treasurer under Illinois Governor-elect William G. Stratton for the last two years, has been named state public works and buildings director . . . Named to head the public works division, Tennessee State Highway Department, is **Lynn Bomar,** former state commissioner of safety . . . **Lacey Lambert Shirey,** recently assistant bridge engineer for the Chesapeake & Ohio Railway Co., succeeds **C. H. Chapin** as the company's bridge engineer . . . New senior vice-president of Walter Kidde Constructors, Inc., is **Charles W. Knowles** . . . Directors of the Thew Shovel Co., Lorain, Ohio, have announced the appointment of three company engineers to newly created positions in the organization. **R. H. Zeilman** has been named director of engineering, **M. L. Sheetz,** chief executive engineer and **O. Van Mehren,** chief design engineer . . . Taking over as general manager of construction of the M. W. Kellogg Co., is **Joseph W. Smith,** assistant manager of Kellogg's construction department . . . New professor of architecture and dean of graduate school of design at Harvard University is **Jose Luis Sert.**

• **Elected**—Members of the Delaware State Highway Commission have elected **Samuel N. Culver,** Delmar, to succeed **J. H. Tyler** as commission chairman . . . New president of the Southern California chapter, Associated General Contractors, is **Spencer Webb** of Webb & White, general contractors . . . **Leslie J. Reardon,** associate professor in the Case Institute of Technology's civil engineering department, will head the Cleveland section of the American Society of Civil Engineers . . . Elected president and secretary of A. W. Burns & Sons Construction Co., Columbus, is **Andrew W. Burns, Jr.** . . . **Edwin B. Cobb** and **John S. Bethel, Jr.,** have been elected to partnership in the firm of Metcalf & Eddy, Boston engineers.

• **Retired**—**James Brower,** superintendent of Milwaukee's Jones Island sewage disposal plant for the last quarter of a century, has announced his retirement.

• **Announcements**—**William M. LaBastille** has resigned as vice-president of James Stewart Corp., Chicago, and announced the formation of **W. M. LaBastille, Inc.,** general contractors, with offices in Chicago . . . **C. B. Antill and Co.** have opened new offices in Corpus Christi, Tex.

OBITUARIES

William O. Clark, 78, a ground water expert in Hawaii for 26 years, died Dec. 26 in Palo Alto, Calif. A graduate of Stanford University, he was acting professor of geology at State College, Washington, in 1906-1907; then taught geology and physiography at Milwaukee State Normal school for five years. He joined the U. S. Geological Survey in 1912 and did extensive work on ground water in Nevada and California. In February, 1920, he was sent to Hawaii to investigate the occurrence of ground water in the Kau district. Later he joined C. Brewer & Co., Ltd., to direct tunneling development at Pahala and Naalehu.

L. A. Boulay, 74, former Ohio director of highways and public works, died Jan. 10 in Washington, D. C. He served as regional director of the Federal Public Works Administration at Columbus from 1932 to 1938. His last business association in Columbus was with Cantwell Machinery Co.

Clark F. Pool, 62, an engineer with the West Va. state road commission, died at Charleston, Dec. 27. He was a 1912 graduate of West Virginia University, and had been with the road commission for the last 15 years.

William Louden Rowe, 74, a civil engineer and retired secretary of the Pittsburgh Steel Co., died Dec. 31. He was a graduate of Princeton University, 1902.

Herman C. Camin, 61, for many years a building contractor in Scranton, Pa., died Jan. 6.

Col. John A. Laird, 91, retired consulting engineer and engineering officer in the Spanish-American War and World War I, died Jan. 17 at St. Louis. For several years, he was in charge of mechanical engineering for the city water division and in that capacity supervised phases of construction of the Chain of Rocks water plant serving St. Louis. He was captain of the Third Engineers in the Spanish-American War. In World War I, he went overseas as a major with the Twelfth Engineers, returning after 21 months as colonel in command of the regiment.

Gilbert Francis Beers, 57, engineer and building contractor, died Jan. 15 in Atlanta, Ga. A graduate of Massachusetts Institute of Technology, Mr. Beers was the owner of Gilbert Beers Construction Co.

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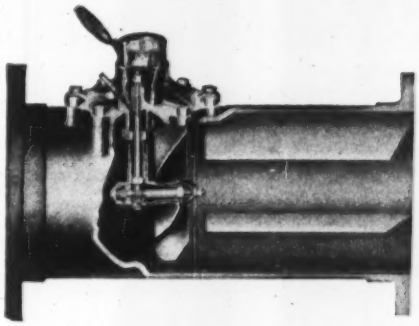

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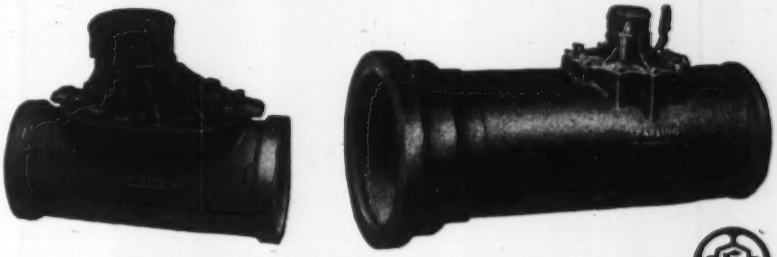

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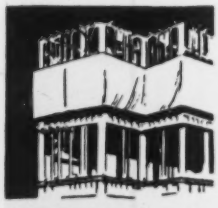

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Cost-plus contracts

"Where the parties to a building contract in which the builder is to be paid on a cost-plus-fee basis, and before the job is completed, a dispute arises as to the amount then due, and because of nonpayment of the bills submitted as provided by the contract, the contractor refuses to proceed further and withdraws from the job, if such withdrawal is legally justified upon the facts, the owner is liable to the builder for the actual cost incurred to the date of the termination of the agreement, together with the fee provided for in the contract, if that was a definite amount, provided the builder has not been guilty of malfeasance, extravagance, wastefulness or negligence in the prosecution of the work and has proceeded with reasonable dispatch and due diligence to accomplish the provisions of the contract."[1]

(1) Charles A. Burton, Inc. v. Durkee et al., 106 N. E. 2d 313, Court of Appeals of Ohio, Nov. 26, 1952.

Damages are limited

The owners of a building paid a contractor $559 to put on their building a new three-ply asphalt roof, guaranteed for five years. Immediately after the roof had been installed it started to leak badly in many places and after the contractor refused to correct the defects, the owner, after concluded that the only and economical remedy for the trouble was to install an entirely new roof. The owner then paid another contractor $630 to apply another room of the same general character, but guaranteed for ten years. The owner then brought action against the first contractor to recover the $630, the entire cost of installation of the second roof.

The trial court granted the owner a judgment for the full amount. This judgment was reversed by the appellate court.[1]

The appellate court in its opinion stated: "The proper measure of damages is the difference between the value of the building equipped with the defective roof, which defendant installed, and what the value would have been as agreed. Lunt v. Brown Bros. Co., 172 App. Div. 31, 157 N.Y.S. 150, affirmed 224 N.Y. 666, 121 N.E. 876; Pollock v. Queens Land & Title Co., 147 App. Div. 571, 132 N.Y.S. 725; Walter v. Hangen, 71 App. Div. 40, 75 N.Y.S. 683.

"To be sure, even in proving the

damages under the correct rule, the proof of what it actually cost to complete the work undertaken and left unfinished or defectively done may be proved as some evidence of damage. Kidd v. McCormick, 83 N.Y. 391; Mayor, etc., of New York City v. Second Ave. R.R. Co., 102 N.Y. 572, 7 N.E. 905, 55 Am. Rep. 839. However, the only evidence here offered related to the cost of a ten-year roof to take the place of the five-year roof which the defendant undertook to build.

"Let us suppose, for example, plaintiffs had elected to build a copper roof to remedy the condition caused by defendant's failure to build a five-year asphalt roof. Assuredly proof of the actual cost of such copper roof would not furnish a just measure of damage. While plaintiffs are entitled to as good a roof as defendant undertook to build, no matter how advantageous may have been the bargain they made with defendant, still defendant should not be called upon to pay the cost of a better roof than it contracted to build."

(1) Ciminelli et al. v. Umland Bros., Inc., 236 App. Div. 154, 258 N.Y.S. 143.

Delay caused by weather

The United States Court of Claims in a recent case[1] held that where delay by the government in giving the contractor an order to proceed with the work resulted from usually severe weather, such delay was caused by an act of God and the government was not liable to the contractor for the damages suffered by reason of such delay.

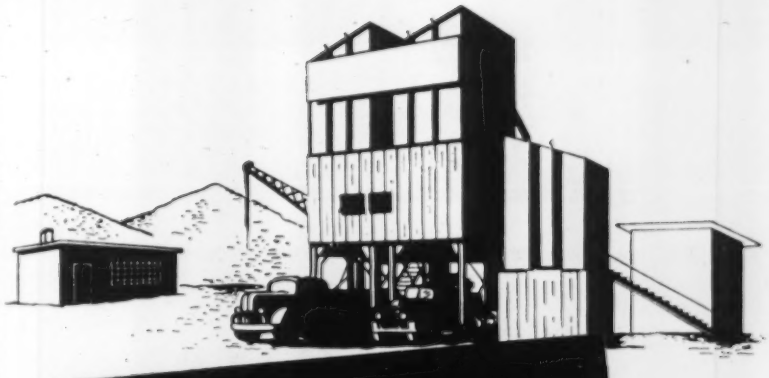
(1) Warren Bros. Roads Co. v. United States, 105 F. Supp. 826, United States Court of Claims, June 15, 1952.

Liability for defects

"In the usual contract to repair, the law implies an undertaking to perform the work in a reasonably skillful and workmanlike manner. But it does not follow that an artisan must answer in damages for anything which may later go wrong with an article or mechanism he has undertaken to repair. Liability can only be imposed upon him when it is shown that he used improper methods or defective materials or was otherwise guilty of breach of his implied warranty."[1]

(1) Bellman Heating Co. v Holland, 86 A. 2d 526, Municipal Court of Appeals for the District of Columbia, Feb. 8, 1952.

(These summaries of court decisions are prepared by I. Vernon Werbin, New York attorney and civil engineer.)



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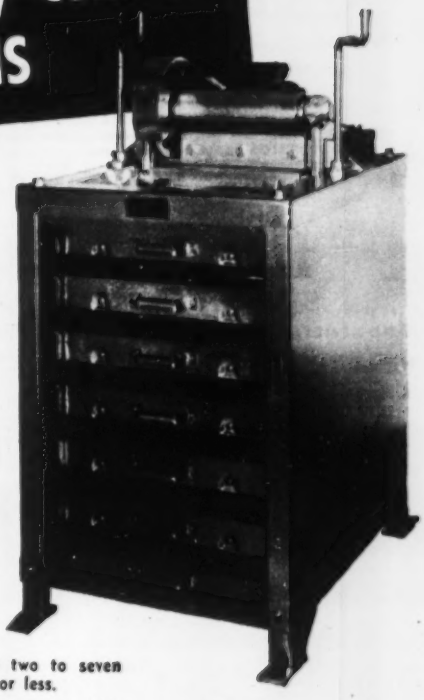

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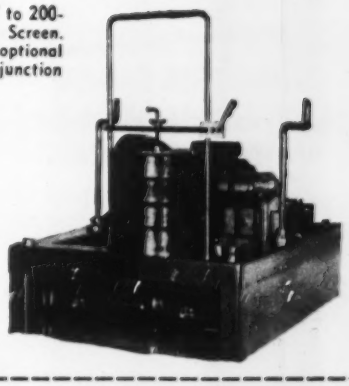

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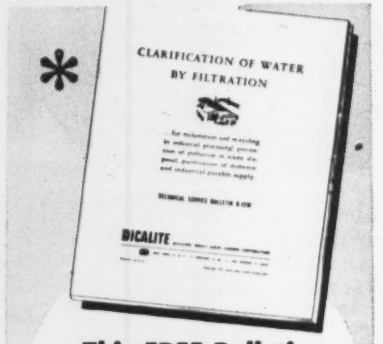

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BOOKS

Reports and pamphlets

BASE COURSE DRAINAGE FOR AIRPORT PAVEMENTS—Harvard Soil Mechanics Series No. 40 Pierce Hall, Harvard University, Cambridge, Mass.

STRESSES IN ROCK ABOUT CAVITIES, Reprinted from Geotechnique. Harvard Soil Mechanics Series, No. 41, Pierce Hall, Harvard University, Cambridge, Mass.

SOIL MECHANICS PAPERS PRESENTED AT THE BUILDING RESEARCH CONGRESS 1951—Technical Memorandum No. 25, Associate Committee on Soil and Snow Mechanics, National Research Council, Ottawa, Ont., Canada.

MARYLAND STATE PARKS AND RECREATION AREAS—A Master Plan—Maryland State Planning Commission, 100 Equitable Bldg., Baltimore 2, Md. $1.00.

TURNING ON THE LIGHT—Let's Take A Look at People, Power and Government—National Association of Electric Companies, 1200 18th St., N. W., Washington 6, D. C.

REPORT ON A STUDY OF FLORIDA HIGHWAYS FOR THE STATE ROAD DEPARTMENT OF FLORIDA—Parsons, Brinckerhoff, Hall & Macdonald, Engineers, 51 Broadway, N. Y. 6, N. Y.

HISTORY OF EARTHQUAKES IN THE SAN FRANCISCO BAY AREA—Pacific Fire Rating Bureau, 465 California St., San Francisco 4, Calif. Limited free distribution.

PERFORMANCE OF CONCRETE PAVEMENT ON GRANULAR SUBBASE—Bulletin 52 Highway Research Board, 2101 Constitution Ave., Washington, D. C. 60 cents.

LOAD CAPACITY OF ROADS AFFECTED BY FROST—Bulletin 54, Highway Research Board, 2101 Constitution Ave., Washington, D. C.

PERFORMANCE STANDARDS FOR RELOCATABLE HOUSING—Housing and Home Finance Agency, Washington 25, D. C.

DESIGN FOR THERAPY—An investigation into the possibilities of collaboration between psychiatrists and architects in developing basic information for mental hospital design, construction and equipment. American Psychiatric Association, 1795 Massachusetts Ave., N. W., Washington 6, D. C. $1.25.

GEOMETRY OF CLASSROOMS AS RELATED TO NATURAL LIGHTING AND NATURAL VENTILATION—Research Report No. 63, Texas Engineering Experiment Station, College Station, Tex.

MAINTENANCE TIPS FOR UNPAVED ROADS—Calcium Chloride Institute, 909 Ring Building, Washington 6, D. C.

A STUDY OF THE PRACTICAL EFFICIENCY UNDER STATIC LOADING OF RIVETED JOINTS CONNECTING PLATES—Bulletin Series No. 402, University of Illinois Engineering Experiment Station, Urbana, Ill. 75 cents.

COMPARATIVE PERFORMANCES OF A WARM-AIR CEILING PANEL SYSTEM AND A CONVECTION SYSTEM—Bulletin

Series No. 401, University of Illinois Engineering Experiment Station, Urbana, Ill. 80¢

SYMPOSIUM ON SURFACE AND SUBSURFACE RECONNAISSANCE — Special Technical Publication No. 122, American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. $3.00.

SYMPOSIUM ON CONSOLIDATION TESTING OF SOILS—Special Technical Publication No. 126, American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. $1.75.

ROAD STABILIZATION—International Salt Co., Inc., Scranton, Pa.

ELEVATOR DOLLARS AT WORK—Charles W. Lerch & Associates, Board of Trade Bldg., Chicago 4, Ill.

EXTINGUISHING OIL TANKS FIRES BY AGITATION—National Fire Protection Association, 60 Batterymarch St., Boston, Mass. 35¢

HIGHWAY FACTS — Automotive Safety Foundation, 700 Hill Bldg., Washington 6, D. C.

THE PORTLAND CEMENT INDUSTRY—No. 18, American Industries series. Bellman Publishing Co., Box 172, Cambridge 38, Mass. $1.00.

STANDARD SPECIFICATION FOR INDUSTRIAL LIGHTING UNITS—RLM Standards Institute, 326 W. Madison St., Chicago 6, Ill. Limited free distribution.

CHANNELIZATION: The Design of Highway Intersections at Grade—Special Report No. 5, Highway Research Board, Washington 25, D. C. $6.00.

FLOOD CONTROL AND NAVIGATION MAPS OF THE MISSISSIPPI RIVER—20th Edition. Mississippi River Commission, Box 80, Vicksburg, Miss. $2.00.

ELASTIC BEHAVIOR OF SINGLE-ANGLE MEMBERS IN A TRUSSED TOWER—Bulletin 173 Iowa Engineering Experiment Station, Ames, Iowa.

PRIORITIES AND THE DEVELOPMENT OF ANNUAL HIGHWAY PROGRAMS — National Highway Users Conference, 952 National Press Building, Washington 4.

ADVANCEMENTS IN WOOD RESEARCH AND TIMBER ENGINEERING—Timber Engineering Co., 1319 Eighteenth Street, N. W., Washington 6, D. C.

AMERICAN STANDARD PRACTICE FOR INDUSTRIAL LIGHTING — Illuminating Engineering Society, 1860 Broadway, New York 23, N. Y. 50 cents.

PARKING TURNOUTS AND REST AREAS—Special Report 7. Highway Research Board, 2101 Constitution Avenue, Washington, D. C. 75¢.

HIGHWAY SUFFICIENCY RATINGS—Bulletin 53. Highway Research Board, 2101 Constitution Ave., Washington, D. C. 90 cents.

HOUSING . . . U.S.A.—Reference Manual on Housing Issues—National Association of Home Builders, 1028 Connecticut Ave., N. W., Washington, D. C.

LAND ACQUISITION AND CONTROL OF ADJACENT AREA—Bulletin 55. Highway Research Board, 2101 Constitution Ave., Washington 25, D. C. 90 cents.

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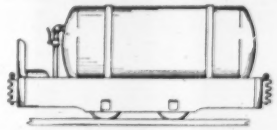

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ECONOMY METAL FORMS

New $2,000,000 East River Pedestrian Bridge provides access from East 103rd Street, Manhattan, to Wards Island, New York.

City of New York, owner; Hardesty, Hanover, Ammann & Whitney, consulting engineers; Johnson Electric Co., electrical contractor; American Bridge, fabricator-erector.

From this modern Westinghouse Control Desk, the operator has complete finger-tip control of all operations.

World's longest girder lift span operates from finger-tip control

A finger-tip speed control system plays a vital role on the Department of Public Works' new East River Pedestrian Bridge. Connecting East 103rd Street, Manhattan, to Wards Island, New York, this installation features a 312-ft. girder lift span—longest in the world.

Level raising and lowering of the lift span is done by four 40-hp Westinghouse wound-rotor induction motors, paired off in the two towers. Each pair includes a drive motor and a leveling motor. Drive motors raise and lower the span. The other two are connected in a power synchro-tie arrangement to keep the span level.

Centralized operation and control are provided by a Westinghouse Control Desk. Mounted in the desk are main drum controllers, toggle switches, pushbuttons, height and level indicators, instruments and indicating lights. These give the operator complete and centralized control of all operating functions.

Two alternate control methods, in the control desk, have been provided for emergency operation. One system is automatic—utilizing Westinghouse synchro-tie transmitters and a differential receiver. The other permits manual operation.

This is another instance of Westinghouse participation in movable traffic bridge projects—ranging from complete engineering service to supplying electrical apparatus, matched to a specific need.

Your nearest Westinghouse office can give you examples in your own area. Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.

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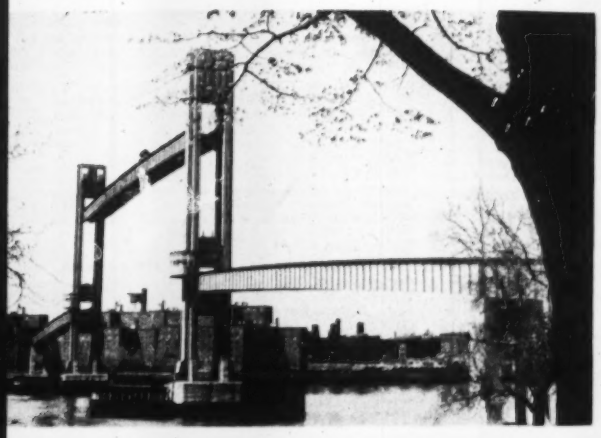

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CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.
ELSIE EAVES, Manager *J. A. MAHONEY, Reports* *M. R. ROESSLER, Statistics*

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

Mass., Boston—B.A. 2/5—State, Metropolitan Dist. Comn., Water Div., 20 Somerset St., Contr. 195, furnishing, laying 8,820 lin. ft. 30 in. steel rein.-con. water pipes, Newton. $300,000. Plans deposit $5. CD 5/12/44.

▲† N. H., Portsmouth—RUNWAY, etc.—Bids Extended Indefinitely—U. S. Eng., 857 Commonwealth Ave., Boston, Mass., runway, taxiways, aprons and aircraft fueling sys., Portsmouth Air Force Base, ENG 19-016-53-6. $5,000,000. CD 12/30.

SOON LETS CONTRACT—BUILDINGS

Conn., Hartford—DORMITORY—Trinity College, c/o Dr. A. H. Hughes, acting pres., soon lets 4 story, brick, concrete, L-shaped dormitory, Summit St., Trinity College. $500,000. Robert B. O'Conner, Jr., & W. H. Killam, 101 Park Ave., New York, N. Y., archts. CD 9/26/46.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

Frank J. Shields, Inc., P.O. Box 302, Southbridge, Mass. LB. **$524,104,** est. $525,000. hy. constr. Mountain Rd, FAS S 93 (1), Princeton,

Hill Constr. Co. & Holden Engineering Co., Inc., Princeton St., Holden, Mass. LB. **$147,971,** est. $150,000. hy. and bridge Auto Rtes. 68 and 140, Gardner. Bids Jan. 13. CD 1/5.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ S. Keilliher Co., 295 Washington St., Boston, Mass., LB. Base Bid No. 1, **$7,442,132;** Base Bid 2, **$7,434,132,** Proj. Mass. 2-19, 732 unit HOUSING, Bromley Park, Roxbury Proj., BOSTON, MASS. Boston Housing Auth., 230 Congress St., Boston, Mass. Bids Jan. 16. CD 12/23.

▲ Tornavene Bros Co., Hingham, Mass., LB. Base Bid **$1,325,000;** Item No. 1, **$750,147;** Item No. 2, **$574,853** HIGH SCHOOL, Pleasant and Union Sts., HINGHAM, MASS. Town, School Planning & Constr. Comm., Supt. Schools, 229 North St., Hingham, Mass. Bids Jan. 15. CD 12/5.

M. J. Walsh & Sons, Inc., 14 Shawmut Ave., Holyoke, Mass., LB. **$922,630,** est. $850,000, Proj. Mass.-46 (C) city infirmary at HOSPITAL, HOLYOKE, MASS. Bd. P. Wks., City Hall, Holyoke, Mass. Bids Jan. 15. CD 12/16.

S. & A. Allen Constr. Co., Inc., 9 Newbury St., Boston, Mass., CA. **$723,217,** municipal GARAGE, Charles Ryan Rd., near Trum Field, SOMERVILLE, Mass. City, City Hall, Somerville, Mass. Bids Dec. 18. CD 12/31, under LB.

Town, School Bldg. Comn., E. W. Thurston, supt. Schools, Deerfield Ave., Westwood, Mass., rejected bids Jan. 13, elementary SCHOOL, Islington Section, WESTWOOD, MASS. CD 12/30.

† Davison Constr. Co., 1305 A-Elm St., Manchester, N. H. LB. **$940,350,** est. $900,000. DRILL HALL-WAREHOUSE, CLASSROOM BLDG., personnel and support facilities, Battalion Camp, Spec. 34832, DAVISVILLE, R. I. First Naval Dist., 495 Summer St., Boston, Mass. Cull & Robinson, 385 Benefit St., Providence, R. I., archts. Bids Jan. 13. CD 12/30.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

DELAWARE—LIGHTING—B.A. 2/2—Delaware State Hy. Dpt., at Office W. A. McWilliams, dir. Delaware Crossing Div., Field Office, Delaware Memorial Bridge, New Castle Ave. Interchange lighting for Delaware Memorial Bridge, Contract No. 26. Howard Needles, Tammen & Bergendoff, 56 Liberty St., New York 5, N. Y., consult engrs.; adv. ENR 1/29.

New Jersey—ROADWAY LIGHTING—B.A. 2/3—**N. J.** Turnpike Auth., Administration Bldg., New Brunswick, furnishing, installing addnl. roadway lighting for service areas and interchanges along N. J. Turnpike Contr. No. 93, various locations in 7 counties. Plans deposit $5. Howard, Needles, Tammen & Bergendoff, 55 Liberty St., New York 5, N. Y., engrs. CD 7/3/49, under Street and Roads.

N. Y., Morrisville—B.A. 2/5—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, addnl. water supply-driven well at State Agricultural & Technical Institute. Plans deposit $5.

▲† N. J., Wrightstown—B.A. 2/6—U. S. Eng., 121 N. Broad St., Phila., Pa., headquarters fighter wiring bldg. and officers mess bldg., at McGuire Air Force Base, Eng 36-109-53-231. $1,000,000. Fridy Gauker Truscott & Fridy, 1321 Arch St., Phila., Pa., archts. and engrs. CD 12/22.

† Md., Andrews Air Force Base—TRANSMITTER and RECEIVER BLDGS.—B.A. 2/10—U. S. Eng., First and Douglas Sts. N. W., Wash. 25, D. C., transmitter and receiver bldgs., ENG 49-080-53-57-(50). CD 10/3/51.

N. Y. New York—B.A. 2/10—Bd. Water Supply 120 Wall St. Zone 5 Contr. 437 furnishing testing del. and unloading gasoline-engine generator sets with switch gear and appurtenances for West Branch and Kensico South Effluent Chambers of the Delaware Aqueduct. CD 12/9.

N. Y., New York—COMFORT STATION—B.A. 2/19—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, Zone 1, comfort station Play Area No. 15, Cross Bronx Expressway. Plans deposit $5.

† N. J., Wrightstown—PARKING APRON, etc.—B.A. 2/20—U. S. Eng., 121 N. Broad St., Phila., Pa., parking apron and taxiway, McGuire Air Force Base, ENG 36-109-53-403. $500,000. Extended date. Whitman, Requardt & Assocs., 1304 St. Paul St., Baltimore, Md., engrs. and archts. CD 1/8.

† Pennsylvania—B.A. On Or About 3/25—U. S. Eng., 121 N. Broad St., Phila., Zone 1, dredging approx. 4,000,000 cu. yd. material from Fairmount Pool, Schuylkill River, above Fairmount Dam, Inv. No. Civ Eng 36-109-53-39. Plans deposit $15. CD 4/21/44.

BIDS ASKED—BUILDINGS

Pa., Phila.—HIGH SCHOOL—B.A. 2/3—Bd. Educ., 21 and Winter Sts., Frankford High School alterations, addns. $880,335. Walter Antrim & Charles G. Etter, 117 S. 17 St., archts. CD 5/26/50.

N. Y., Oneonta—GROUNDS IMPRVS.—B.A. 2/5—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, electrical work for grounds lighting for imprv. grounds at State Teachers College. Plans deposit $10. CD 12/30/46.

▲ Pa., Cornwells Heights—HIGH SCHOOL—B.A. 2/8—At office H. F. Everett & Assoc., archts., 512 Hamilton St., Allentown, high school for Bensalem Pa. Twp. Auth., Cornwells Heights. $1,550,000.

† D. C., Wash.—BIOLOGY, etc.—B.A. 2/20—General Services Admin., P. Bldgs. Service, General Services Bldg., 19 and F Sts. N.W., Zone 25, biology-greenhouse bldg. (except elevator) Howard University, College St. N.W. Plans deposit $30. adv. ENR 1/29. CD 1/19.

† N. Y., Syracuse—ARMORY—B.A. 5/27—U. S. Eng., 80 Lafayette St., New York, 13, N. Y., ORC armory. $100,000-$500,000. Sargent, Webster & Folley, Watertown National Bank Bldg., Watertown, archts.

† N. J., Newark—ARMORY—B.A. 6/9—U. S. Eng., 80 Lafayette St., New York, 13, N. Y., ORC armory. $500,000-$1,000,000. A. Davis & Son, 30 Journal Square, Jersey City, archts. CD 7/25/52.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Chicago Bridge & Iron Co., 165 Broadway, New York 6, N. Y., CA. **$242,500,** elevated water storage tank and appurtenances, BETHPAGE, N. Y. Water Comrs., Bethpage Water Dist., Fire House, Bethpage, N. Y. Bids Dec. 11. CD 12/4.

Town of Cortlandt, Verplank Rd., Cortlandt, N. Y. rejected bids Dec. 30, water supply standpipe and pump house. CORTLANDT, N. Y. Est. **$397,000.** Will readvertise on revised plans.

▲† T. C. Bateson Constr. Co., Irwin-Keasler Bldg., Dallas, Tex., LB, **$3,392,115,** aircraft maintenance hangar, McGuire Air Force Base, Eng 36-109-53-230, WRIGHTSTOWN, N. J. U. S. Eng., 121 N. Broad St., Phila., 1, Pa. Bids Jan. 7.

† The Ferber Co., 16 Johnson Ave., Hackensack, N. J., LB, **$644,688,** freight terminal and paving McGuire Air Force Base, ENG 36-109-53-170, WRIGHTSTOWN, N. J. U. S. Eng., 121 N. Broad St., Phila., Pa. Bids Jan. 8.

▲† John A. Johnson & Sons, Inc., 303 41 St., Brooklyn, N. Y. CA, **$6,992,000,** 22 airmen's dormitories, 21 or 22 S.A.C. Barracks, McGuire Air Force Base, ENG 36-109-53-159, WRIGHTSTOWN, N. J. U. S. Eng., 121 N. Broad St., Phila., Pa. Bids Dec. 23. CD 11/13.

▲ PENNSYLVANIA—State Hy. & Bridge Auth. 506 N. Office Bldg. Harrisburg

Harrison Constr. Co. 1101 Western Ave., Pittsburgh, Pa., CA **$4,166,628.** Const. 14,094 ft. rein.-con. roadway and superstructure for four structures and one substructure, Penn-Lincoln Parkway, between Colbert and Maurice Sts., Allegheny Co. Bids Dec. 30, awarded Jan. 13. CD 1/5, under LB.

Frank Mark Co., Castor Ave. and Wingohocking St., Phila., Pa., LB **$64,465,** sewers, Schedule A-3, various locations;

James D. Morrissey, Inc., 9119 Frankford Ave., Phila., Pa., LB **$167,993,** sewers, Schedule A-1, various locations, PHILA., PA. Dpt. Procurement, City Hall Annex, Phila. Pa. Samuel S. Baxter, c/o owner, water comr. **Bids Jan. 5.**

Laub Constr. Co., 1518 Walnut St., Phila., Pa., CA **$542,988.** general contract. Chemical bldg. at Queen Lane Filter Plant, PHILA., PA. Dpt. Procurement, City Hall Annex, Phila., Pa. Bids Nov. 17. CD 12/11, under LB.

▲ C. B. Constr. Co., 1121 Frankford Ave., Phila., Pa., CA, **$1,381,650,** West Side Intercepting system, intercepting chambers and appurtenances, PHILA., PA. Dpt. Procurement, City Hall Annex, Phila., Pa. Bids Oct. 1. CD 10/15, under LB.

▲ James N. Driscoll Co., Inc., 1121 Frankford Ave., Phila., Pa., CA. **$3,417,435,** Intercepting Sewer, Lower Delaware Collecting System, PHILA., PA. Dpt. Procurement, City Hall Annex, Phila., Pa. Bids Nov. 17. CD 11/25, under LB.

Leo Butler Co., College Park, Md., CA. **$946,460.** Central Schuylkill East Side Intercepting Sewer, PHILA., PA. Dpt. Procurement, City Hall Annex, Phila., Pa., Samuel S. Baxter, c/o owner, Water Comr. CD 3/11/46.

▲ Kaufman Constr. Co., 4000 Pulaski Ave., Phila., Pa., CA. **$3,197,006,** Subway Constr. Market from West of 21 St. to east of 24 St., PHILA., PA. Dpt. Procurement, City Hall Annex, Phila. Pa. Bids Dec. 2. CD 12/31, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Prisant-Berman, Inc., 70 Middle Neck Rd., Great Neck, N. Y., Owner Builds. $500,000. 4 story OFFICE 45 North Station Plaza, GREAT NECK, N. Y. Mayer & Whittlesey, M. Milton Glass, 31 Union Square, New York 3, N. Y. archts.

▲† Rust Eng. Co., 575 Sixth Ave., Pittsburgh, Pa., LB **$3,365,000.** BUILDING CONSTR., facilities at Knolls Atomic Power Laboratory, Proj. C.I.R., Inv. AE-52-SCH 69, WEST MILTON, N. Y. U. S. Atomic Energy Comn., Schenectady Operations Office, Knolls Atomic Power Laboratory, Bldg A1, Niskayuna, N. Y. Bids Jan. 6. CD 10/30.

▲ Robert C. Sallon, State Rd., Upper Darby, Pa. Separate Contracts. **$3,690,000,** RESIDENTIAL DEVELOPMENT, Fairview Ave., etc., CAMDEN, N. J. Dante J. D'Anastasio, 1815 Federal St., Camden, N. J., archt.

▲ Gumina Bldg. & Constr. Co., foot of Talmadge St., New Brunswick, Pa., LB **$1,183,994.** Delhaas HIGH SCHOOL addn., Rogers Rd., BRISTOL, PA. Bristol Twp. School Dist., Bristol, Pa., Bids Jan. 6. CD 12/11.

A. C. Shand, Devon, Pa., Separate Contracts. **$600,000** RESIDENTIAL DEVELOPMENT, Hunters Lane, DEVON, PA.

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000.

Classes of Construction

(Name in order of Listing)

Water Supply	Latin America
Sewers, Waste Disposal	Public Buildings
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
B.A.	Bids Asked
ENR	Engineering News-Record
CD	Engineering News-Record Construction Daily

▲ **Roberts Constr. Co.,** 1505 Race St., Phila. Pa., CA $2,000,000. RESIDENTIAL DEVELOPMENT, Easttown Twp., DEVON, PA. Leopard Lake Estates, Inc., c/o contractor. John B. Thomson, 125 Coulter Ave., Ardmore, Pa. archt.

J. Wayne Ortlip, 333 Northcroft Rd., Springfield, Pa. Separate Contracts. $700,000. RESIDENTIAL DEVELOPMENT, various locations, HAVERTOWN, PA.

Arters Bros., Lima, Pa., Separate Contracts. $600,000. RESIDENTIAL DEVELOPMENT, Rose Tree Rd., Upper Providence Twp., MEDIA, PA. George Hay, Lima, Pa., archt.

▲ **Louis J. Rosato,** 201 W. Broadway, Clifton Heights, Pa. Separate Contracts. $1,000,000. RESIDENTIAL DEVELOPMENT, Mulberry St., PARKSIDE, PA.

▲ **Lened Homes, Inc.,** 2015 E. Allegheny Ave., Phila., Pa., Separate Contracts. $1,000,000. RESIDENTIAL DEVELOPMENT, Brous and St. Vincent Sts., PHILA., PA. Henry S. Berg, 1411 Walnut St., Phila., Pa., archt.

▲ **Bialas Constr. Co.,** 5235 Howland St., Phila., Pa. Separate Contracts. $1,500,000. RESIDENTIAL DEVELOPMENT, Byberry and Academy Rd., PHILA. PA.

Cheltenhome, Inc., 1609 Western Savings Fund Bldg., Phila., Pa., Separate Contracts. $600,000. RESIDENTIAL DEVELOPMENT, Whitaker Ave., PHILA. PA.

William N. Greenhouse, 5601 N. Broad St., Phila., Pa., CA. $500,000. Department STORE. (J. C. Penney Co., lessee), PHILA. PA. E. J. Rainey, c/o contractor. CD 5/8/50.

▲ **McCloskey & Co.,** 1620 W. Thompson St., Phila., Pa., LB $5,966,000, Schuylkill Falls Low Rent HOUSING, PHILA., PA. Phila. Housing Auth., 42 S. 15 St., Phila. Pa. Oscar G. Stonorov, Broad St. Station Bldg., Phila., Pa., archt. CD 1/31/51.

Mason-McDowell, 8092 West Chester Pike, Kirlyn, Pa., Separate Contracts. $500,000. RESIDENTIAL DEVELOPMENT, Westbrook Park, Darby Twp., SHARON HILL, PA.

Irwin & Leighton, 1505 Race St., Phila. Pa., CA $750,000. Nittany Lion INN, STATE COLLEGE, PA. Penna State College, State College, Pa. Bids Dec. 2. CD 1/6 under LB.

▲**Irwin & Leighton,** 1505 Race St., Phila., Pa., CA $1,500,000. STUDENT UNION BLDG., STATE COLLEGE, PA. Penna State College, State College, Pa. Bids Dec. 2. CD 1/6, under LB.

Louis J. Rosato, 201 W. Broadway Ave., Clifton Heights, Pa., Separate Contracts. $550,000. RESIDENTIAL DEVELOPMENT, 10th St., UPLAND, PA.

Wallingford Homes, c/o Edwin C. Pritchard, Malvern, Pa., Separate Contracts. $500,000. RESIDENTIAL DEVELOPMENT, Providence Rd., WALLINGFORD, PA.

† **Humphreys & Harding,** 25 E. St. S.E., Wash., D. C., LB $266,930. underwater weapons ASSEMBLY and STORAGE BLDG., Naval Ordnance Laboratory, NOY 75352, WHITE ORK, MD. Dist. P. Wks. Office, Potomac River Naval Command, Naval Gun Factory, Wash., D. C. Bids Jan. 14. CD 12/29.

▲ **John McShain, Inc.,** 1501 N. Arlington Ridge Rd., Arlington, Va., Own Forces, $1,500,000, 12 story, brick, stone concrete STORAGE and OFFICE BLDG., 13 and Pennsylvania Ave. N.W., WASH., D. C. Jacob Feld, 60 E. 23 St., New York, N. Y., consult. engr. Edwin Weihe, 927 15 ST. N.W., Wash., D. C., archt. CD 11/18.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

† **Va., Dam Neck**—PUBLIC WORKS BLDG.—B.A. 2/3—P. Wks. Office, Headquarters, Fifth Naval Dist., U. S. Naval Base, Norfolk, Zone 11, public works bldg. at Fleet Air Defense Training Center, NOY 75758, Spec. 36515. Plans deposit $20.

† **W. Va., Huntington**—PAVING—B.A. 2/10—Dist. P. Wks. Office, Headquarters, Fifth Naval Dist., U.S. Naval Base, Norfolk 11, Va., paving U.S. Naval and Marine Corps. Reserve Training Center, Spec. 35818. Plans deposit $10.

† **Ga., Macon**—HEADQUARTERS—B.A. On or About 2/23—U. S. Eng., 200 E. St., Julian St., Savannah, 3 story, 90,000 sq. ft., rein.-con. concrete blocks, headquarters bldg., 14th Air Force Base, Warner Robins Air Force Base, on State Hy. 247, Warner Robins, 15 mi. south of here, ENG 09-133-53-31.

BIDS ASKED—BUILDINGS

La., New Orleans—CHURCH—B.A. 2/3—Grace Episcopal Church, c/o August Perez & Assoc., archts., Audubon Bldg., church. $500,000. CD 1/2.

Ala., Eufaula—HOSPITAL—B.A. 2/11—Barbour Co., hospital, $700,000. Extended date. Sherlock, Smith & Adams, 303 Washington Ave., Montgomery, archts. CD 11/21.

▲ **Va., Fairfax**—HIGH SCHOOL—B.A. 2/12—Fairfax County School Bd., Fairfax, 2 story brick, concrete masonry Springfield High School, Annandale, $1,250,000. Plans deposit $35. Robert A. Widgoos, 300 Montgomery St. Alexandria, archt. Beall & LeMay, 1726 "M" St. N. W., Wash., D. C., engrs. CD 8/6.

Ala., Huntsville—HOUSING—B.A. 2/12—HUNTSVILLE Housing Auth., Huntsville, 166 housing units, Extended date. CD 1/21/52.

† **Tenn., Milan**—WAREHOUSE, etc.—B.A. On Or About 2/18—U. S. Eng., 303 Federal Office Bldg., Nashville, Zone 1, three 50x220 ft. warehouses; two approx. 60x340 ft. warehouses addns., utilities for warehouses, incl. drainage, roadways, water, sprinkler and electrical systems; 680 lin. ft. railroad, Milan Arsenal, Serial No. ENG 40-058-53-13. CD 4/15.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **J. Kennon Perrin Co.,** P.O. Box 8687, Richmond, Va., CA. $68,336. rehabilitation of Bldg. 1161, Proj. 44-600-53-35, LANGLEY AIR FORCE BASE, VA. National Advisory Com. for Aeronautics, Langley Field, Va. Bids Dec. 29. CD 9/11.

▲† **Brown Coble Const Co.,** Lextington, N. C., LB $1,538,200, auxiliary for Marine Corps Air Station, NOY 70720, WILMINGTON, N. C. Dpt. Navy, Officer in Charge of Construction, Box 365, Naval Base, Charleston, S. C. Bids Jan. 18. CC 1/16.

Sullivan Long & Hagerty, Bessamer, Ala., CA, $752,737, filter plant addn., AUGUSTA, Ga. City, City Hall, Augusta, Ga. Bids Jan. 6. CD 1/13, under LB.

▲† **A. R. Briggs Constr. Co.,** Macon, Ga., LB, $1,248,400 administration spaces addn. to Bldgs 1103 and 1104, Warner Robins Air Force Base, Inv. 53-27, MACON, GA. U.S. Eng., 200 E. Julian St., Savannah, Ga. Bids Jan. 16. CD 1/8.

▲ **Blythe Bros. Co.,** 2911 Hutchinson Ave., Charlotte, N. C. and **W. T. Price Dredging Co.,** 3200 S. W. 27 Ave., Miami, Fla., LB, $6,726,227, est. $5,657,715 Contract No. 1, 83,000 lin. ft. intercepting sewers, 14,000 lin. ft. precast concrete pipe force mains, manholes structures, 310 lin. ft. triple pipe inverted siphon incl. rein.-con. and c.i. pipe with special structures;

Defense Constr. Co., 110 Colonial Ave., Bridgeport, Conn. LB, $2,454,160, est. $2,923,568, Contract No. 2, N.E. 77 St. Pumping Station 29 x 37 ft. 2 main sewage pumps and appurtenances at N.W. 5 Ave. and N.E. 77 St.; N.E. 55 Terrace Pumping Station 24 x 28 ft. 2 main sewage pumps and appurtenances at Morningside Park; N.E. 9 St. Pumping Station 59 x 115 ft. 2 main sewage pumps 3 diesel engines, Venturi vault, Venturi meter and appurtenances, Biscayne Bay between N.E. 9 and 10 Sts.; N.W. 4 St. Pumping Station 59 x 102 ft. 5 main-sewage pumps, 3 diesel engines, transformer sub-station, Venturi vault, 2 Venturi meters, appurtenances Bricknell Pumping Station 15 x 23 ft., 2 main sewage pumps appurtenances Parkway near S.E. 25 St.;

Merritt-Chapman & Scott Corp., 260 Madison Ave., New York, 16, N. Y., LB, $1,988,878, est. $2,600,000, Contract No. 3, Biscayne Bay Force Main, 14,350 lin. ft. 72 in. rein.-con. pipe under Biscayne Bay from Bayfront Park to Virginia Key incl. structures and appurtenances;

Paul Smith Constr. Co., 3103 N.W. 20 St., Miami, Fla., LB, $9,217,563, est. $9,435,810, Contract No. 4, sewage treatment plant on Virginia Key incl. hydraulic fill over 80 acres eight 1 and 2 story bldgs., 2 grit chambers, 4 aeration tanks, 4 settling tanks, 4 sludge digestion tanks with floating covers, 4 elutriation and concentration tanks, sewers, conduits, channels, pipe lines equipment;

Diamond Constr. Co., Little Creek, Norfolk, Va., LB, $1,677,670, est $1,586,550 Contract No. 5, Virginia Key Outfall Sewer, 12,270 lin. ft. 108 in. precast rein.-con. sewer on Virgina Key, 4,650 lin. ft. 90 in. precast rein.-con. sewer Virginia Key and Atlantic Ocean. No bid on entire job. MIAMI, FLA. Water & Sewer Bd. 3342 Dinner Key Dr., Miami, Fla. Bids Jan. 15. CD 10/10.

▲† **Westinghouse Corp.,** P.O. Box 868, Pittsburgh 30, Pa., LB $2,070,378. design, manufacture, delivery, installation, testing 3 giant generators for the Cheatham Lock and Dam Proj., Cumberland River, TENNESSEE. U. S. Eng., 303 Federal Office Bldg., Nashville, Tenn. CD 6/18.

BUILDINGS

LOW BIDS AND CONTRACTS

Hunter Hills, Inc., c/o E. T. Hoyle, Southeastern Bldg., Greensboro, N. C. Owner Builds. $800,000. 79 RESIDENCES, GREENSBORO, N. C.

Georgia Power Co., 75 Marietta St., N.W., Atlanta, Ga., Owner Builds, $500,000 electric SUB-STATION, AUGUSTA, GA.

American Agricultural Chemical Corp., Bartow, Fla., Owner Builds, $500,000 PLANT addn., BARTOW, FLA.

▲ **John B. Orr, Inc.,** 485 N.W. 54 St., Miami, Fla., CA, $2,000,000, CLUBHOUSE, HIALEAH, FLA. Hialeah Race Course, Hialeah, Fla.

Perusini Constr. Co., 1720 28 Ave. S., Birmingham, Ala., CA, $609,872, 82 HOUSING units, BROOKSIDE, ALA. Jefferson Co. Rural Housing Auth., Frank Nelson Bldg., Birmingham, Ala. Bids Jan. 8. CD 1/13, under LB.

▲ **Farnsworth & Chambers Co.,** P.O. Box 332, New Orleans, La., CA. $4,503,995, HOUSING, Proj. LA 1-10, NEW ORLEANS, LA. New Orleans Housing Auth., 1111 Tulane St., New Orleans, La. Bids Jan. 6. CD 1/16, under LB.

▲ **Southern Constr. Corp.,** P.O. Box 1011, Lake Charles, La., LB $1,000,500, construct, manage, finance, 90 HOUSING units, NEW ORLEANS, LA. P. Wks. Office, Bldg. 16, Naval Station, New Orleans, La. Bids Jan. 13. CD 12/12.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

▲ **Mich., Detroit**—B.A. 2/5—Bd. Water Comrs., Water Board Bldg., 735 Randolph St., Zone 26, Contr. No. NE-3, substructure, superstructure water pumping plant, low lift structure, 104 ft. OD, 55 ft. high, steel, rein.-con., Northeast Station, 11000 Eight Mile Rd. Plans deposit $75. Bids 10/23, rejected. Correction—status). CD 12/4, under CA.

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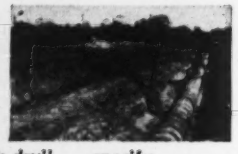
BUILDINGS



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BIDS ASKED—BUILDINGS

† **O., Warren**—MAINTENANCE SHOP—B.A. 2/13—U. S. Eng., 237 Fourth Ave., Huntington 18, W. Va., maintenance shop, Lordstown Ordnance Depot, Serial No. ENG 46-022-53-31. CD 1/10.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **OHIO**—Ohio Turnpike Comn., 361 E. Broad St., Columbus, Zone 15,

Bethlehem Steel Co., E. 3 St., Bethlehem, Pa., CA $4,637,790, twin bridge across Cuyahoga River, Summit Co. Bids Jan. 14. CD 1/16, under LB.

▲ **Wellman Eng. Co.**, 7000 Central St., Cleveland, O. CA. Approx. $2,700,000, install 2 iron-ore unloaders at docks at Bay Shore and Otter Creek Rd., TOLEDO, O. Lakefront Dock & Railroad Terminal Co., A. C. Clarke, ch. engr., 2 N. Charles St., Baltimore 1, Md. CD 6/25.

Midwest Constr. Co., Wheaton, Ill., CA. Approx. $65,000, install 1 mi. 12 in. pipe, Navarre Ave., TOLEDO, O. Ohio Fuel Gas Co., 231 Huron St., Toledo, O.

† **Taylor Electric Corp.**, 2742 Sylvania St., Toledo, O. LB. $88,490, steel sub-station, Rossford Ordnance Depot, Serial No. ENG. 46-022-53-27, TOLEDO, O. U. S. Eng., 237 Fourth Ave., Huntington, W. Va. Bids Jan. 6. CD 12/10.

BUILDINGS

LOW BIDS AND CONTRACTS

† **A. Bentley & Sons Co.**, 201 Belmont St., Toledo, O. LB $184,840, imprv. 2 WAREHOUSES, incl. replacing frame walls with concrete and overall fireproofing, Rossford Ordnance Depot, Serial No. ENG. 46-022-53-28, TOLEDO, O. U. S. Eng., 237 Fourth Ave., Huntington 18, W. Va. Bids Jan. 13. CD 12/18.

George J. Murphy Constr. Co., 519 Belmont Ave., Youngstown, O. Approx. $100,000, 5,500 sq. ft. steel framed roll FOUNDRY addn., to be built around old office bldg., YOUNGSTOWN, O. Youngstown Foundry & Machine Co., E. Boardman St., Youngstown, O.

▲ **John Griffiths & Son Co.**, 228 N. La Salle St., Chicago, 1, Ill., CA. $5,945,739, 2 level, 400,000 sq. ft. underground GARAGE, in Grant Park, Randolph to Monroe Sts., CHICAGO, ILL. Chicago Park District, 425 E. 14 St., Chicago, 5, Ill. Bids Jan. 8, awarded Jan. 12. CD 1/16, under LB.

Ragnar Benson, 4744 W. Rice St., Chicago, 51, Ill., CA. $500,000, FACTORY with OFFICE, FRANKLIN PARK, ILL. Brust Tool Mfg. Co., 1735 Carroll St., Chicago, Ill. Victor L. Charn, 4744 W. Rice St., Chicago, 51, Ill., archt. Awarded Jan. 12.

▲ **W. W. Oeflein, Inc.**, 5345 N. Hopkins St., Milwaukee, 9, Wis., CA. Approx. $1,500,000, 8 story, 75x80 ft. Bldg. B, FERMENTATION TANK BLDG., MILWAUKEE, WIS. Miller Brewing Co., 4000 W. State St., Milwaukee, 8, Wis. Borsari Tank Co. of America, 122 E. 42 St., New York, N. Y., engr. Chas. A. Nagel & Assocs., 7111 W. Wells St., Wauwatosa, 13, Wis., archts. CD 1/6.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

† **Kansas**—B.A. 2/10—Bureau Reclamation, Dpt. Interior, Box 737, McCook, Neb., Kansas River Dist. constr. Webster Dam Government construction Camp, Solomon Div., Kansas-Missouri River Basin Proj., Spec. 701C-299. CD 11/18.

† **Montana**—B.A. 2/10—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., furnishing 62,000 bbl. portland cement for Tiber Dam, Lower Marias Unit, Marias Division, Missouri River Basin Proj., Spec. DS 3874; adv. ENR 1/29. CD 7/30/45.

Tex., Haltom City—B.A. 2/10—City, c/o J. C. Gunter, mayor, Box 7462, Sylvania Station, Fort Worth, water main imprvs. $35,000. Plans deposit $10. Joe J. Rady, 511 Insurance Bldg., Fort Worth, engr. CD 2/26/52.

† **N. M., Albuquerque**—HEATING PLANT—B.A. About 2/18—U. S. Eng., P.O. Box 1538, 2108 Central Ave. S.E., 41x45 ft concrete, masonry central heating plant addn. Kirtland Air Force Base, Serial No. Eng. 29-005-53-85. Plans deposit $50. CD 8/28/51.

BIDS ASKED—BUILDINGS

▲ **Neb., Omaha**—SCHOOL, etc.—B.A. 2/6—Sisters of Mercy, 1801 S. 72 St., school and convent. $1,500,000. L. A. Daly & Co., Insurance Exchange Bldg., archts. CD 11/26.

† **N. M., Las Cruces**—TEST FACILITY—B.A. About 2/18—U. S. Eng., P.O. Box 1538, 2108 Central Ave. S.E., Albuquerque, Solid Propellant Test Facility, incl. approx. 1,200 sq. ft. rein.-con. with earth cover blockhouse air-conditioned; approx. 6,000 sq. ft. unroofed heavy rein.-con., steel test stands, 4 bridge cranes, approx. 330 lin. ft. 4x5 rein.-con. cable trench, explosion proof electrical, fire protection sys. and air sys.; approx. 3,500 sq. yd. double penetration asph. pavement; 10,000 cu. yd. excava., 700 sq. yd. concrete pavement, White Sands Proving Ground, Serial No. Eng. 29-005-53-68. Plans deposit $50. CD 8/28/51.

▲ **Neb., Omaha**—PSYCHIATRIC UNIT—B.A. 2/18—Bd. Regents, University of Nebraska, Lincoln, psychiatric unit, University of Nebraska Medical College. $1,250,000. John Latenser & Sons, 1307 Farnam St., archt. CD 10/11/51.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MINNESOTA—State Hy. Dpt., 1246 University Ave., St. Paul,

Okes Constr. Co., E. 1501 First National Bank Bldg., St. Paul, Minn., CA. $670,109, grading, paving 9 mi. between Center City and Taylors Falls, Chicago Co. Bids Jan. 9. CD 1/13, under LB.

▲ **American Bridge Co.**, Frick Bldg., Pittsburgh, Pa. LB. $4,990,512, total est. $16,000,000. superstructure Paseo Bridge over Missouri River, KANSAS CITY, MO. Jackson and Clay Counties, City of Kansas City, Mo., c/o Reed McKinley, dir. P. Wks. Dpt., City Hall, Kansas City, Mo. Bids Jan. 9. CD 12/23.

† **U. S. Eng.**, 2108 Central Ave. S.E., P.O. Box 1538, Albuquerque, N. M., cancelled bids to have been opened about Feb 9, Arkansas River Levee, Great Bend, CIVENG 29-005-53-3, KANSAS. Will re-advertise. CD 1/7.

TEXAS—State Hy. Comn., Austin,

L. W. Pelphrey Co., P.O. Box 1156, Gladewater, Tex., LB. $205,557, 1.925 mi. bridges, approaches, Hy. St. 49, Proj. F-227 (8) and F-220 (3);

Austin Bridge Co., P.O. Box 1590, Dallas, Tex., LB. $244,906, 0.193 mi. Hickory Creek Bridge, Hy. U. S. 77, Denton Co. Bids Jan. 13. CD 1/2 and 12/24.

† **Whittle Contg. Co.**, P.O. Box 5602, Dallas, Tex., LB $76,017, est. $79,376, bridge foundation protection, Trinity River for Fort Worth Floodway, near Fort Worth, CIVENG 41-443-53-24, TEXAS. U. S. Eng., 100 W. Vickery St., Fort Worth, Tex. Bids Jan. 13. CD 12/18.

TEXAS—State Hy. Comn., Austin,

John F. Buckner & Sons, P. O. Box 76, Cleburne, Tex., LB $88,057, flexible base, one course surf. tr. 9.219 mi. Hy. SH 164, Freestone and Leon Counties;

Cage Bros., 6959 San Pedro St., Rt. 10, Box 46, San Antonio, Tex., LB $110,127, grading, structures, base, surf. 6.385 mi. Hy. FM 1693, Proj. R 1689-1-1 and R 1793-1-1 Colorado Co.;

Cooper & Woodruff, 222 Mays Bldg., Amarillo, Tex., LB $713,823, soil cement base, hot mix b. conc. 10.301 mi. Hy. U. S. 287, Proj. F 449 (5), Clay and Montague Counties; LB $71,042, grading, structures, base, surf. 5.965 mi. Hy. FM 658 and 1034, Proj. S 1100 (2) and S 1245 (2), Hall and Childress Counties;

Farnsworth & Chambers Co., Inc., P. O. Box 74, Houston, Tex., LB $312,400. c. conc. 0.253 mi. Proj. UI 56 (5), Jefferson Co.;

E. W. Hable & Sons, Corsicana, Tex., LB $84,167, grading, structures, base, surf. 3.968 mi. Hy. FM 1838, Proj. R 997-2-1, Navarro Co.;

George Kies, 4612 Ridge Oak Dr., Austin, Tex., LB $130,456, seal coat 149.377 mi. Terry, Dawson, Yoakum, Lynn, Lubbock and Cochran Counties;

Ernest Loyd, P. O. Box 1120, Fort Worth, Tex., LB $78,700, flexible base, asph. 1.172 mi. Hy. U. S. 67, Proj. F 1105 (1), Upton Co.;

Ernest L. Mays, 3430 Minglewood Dr., Beaumont, Tex., LB $61,422, grading, structures, base, surf. 5.642 mi. Hy. FM 82, Proj. R 1583-1 and 2-1 and 1. Jasper and Newton Counties; LB $90,783, grading, structures, base and surf. 5.516 mi. Hy. FM 692, Proj. S 924 (2), Newton Co.;

R. B. Potashnick, Cape Girardeau, Mo., LB $160,457, grading, structures, base, surf. 12.918 mi. Hy. FM 1662, Proj. S 1622 (1), Hill and Limestone Counties;

Dean Skinner, P. O. Box 4057, Austin, Tex., LB $76,090, grading, structures, base, surf. 4.204 mi. Hy. FM 436, Proj. R 231-16-6, Bell Co.;

Dean Word Co., P. O. Box 330, New Braunfels, Tex., LB $61,309, pavement wid'n. and Poesta Creek Bridge 0.697 mi. Hy. SH 202, Proj. C 447-2-6, Bee Co. Bids Jan. 13. CD 12/24 and 1/2.

▲ **TEXAS**—State Hy. Comn., Austin,

Austin Bridge Co., P.O. Box 1590, Dallas, Tex., LB. $640,080, 0.204 mi. Texas & Pacific and PSF Ry. underpass and approaches, Hy. St. 70, Nolan Co.;

Austin Bridge Co., P.O. Box 1590, Dallas, Tex. and **Worth Constr. Co.**, P. O. Box 531, Fort Worth, Tex., LB. $566,027, 0.096 mi. Texas & Pacific R.R. underpass Hy. 81, Proj. UGI 473 (5), Tarrant Co.;

R. B. Butler, Inc., P.O. Box 471, Bryan, Tex., LB. $71,489, 0.066 mi. widen structures, Hy. U.S. 287, Proj. 109-1 and 2-5 and 4, Anderson Co. Bids Jan. 14. CD 12/24 and 1/2.

▲ **TEXAS**—State Hy. Comn., Austin,

Bryan & Hoffman, P.O. Box 390, Plainview, Tex., LB. $164,129, grading, structures, base, surf. 16.599 mi. Hy. FM 145, 1318 and 928, Proj. S 1575 (1), Swisher Co.;

John F. Buckner & Sons, P.O. Box 76, Cleburne, Tex., LB. $177,747, grading, structures, base, surf. 9.529 mi. Hy. FM 410, Proj. S 722 (1) and S 722 (2), Red River Co.;

A. L. Bucy, 804 Avenue I, Brownwood, Tex., LB. $83,724, grading, structures, base, surf. 7.436 mi. Hy. FM 576 and 1852, Proj. S. 1773 (1), Stephens Co.;

Cage Bros., 6959 San Pedro St., San Antonio, Tex., LB. $312,987, flexible base, two course surf. tr. 10.099 mi. Hy. U.S. 281 and SH 199, Proj. F 437 (4), Jack Co.; LB. $189,163, grading, structures, base, surf. 17.329 mi. Proj. R 1643-1-1 and C 1561-1-1, Crockett Co.;

Dudley R. Cloud & Son, 1903 Transit Tower, San Antonio, Tex., LB. $73,717, grading, structures, base, surf. 7.786 mi. Hy. FM 626 and 1020, Proj. S 552 (2) and S 1713 (1), Karnes Co.;

Olene Hanson, 4906 Griggs Rd., Houston, Tex., LB $93,767, grading, structures, base, surf. 6.642 mi. Hy. FM 942, Proj. R 1193-1-3, Polk Co.;

Hugh McMillan, P.O. Box 1227, El Paso, Tex., LB $87,472, grading, structures, base, surf. 9.865 mi. Hy. FM 1927, Ward Co.;

W. O. Pelphrey, 1412 Electric Bldg., Fort Worth, Tex., LB $94,056, grading, structures, base, surf. 8.636 mi. Hy. FM 1957, Proj. V 1531-1-1, Borden Co.;

J. W. Perry, 501 Insurance Bldg., San Antonio, Tex. and **R. B. Butler, Inc.**, P.O. Box 471, Bryan, Tex.,

LB $89,571, grading, structures, base surf. 8.349 mi. Hy. FM 1644, Proj. S. 1730 (1), Robertson Co.;
R. B. Smith, Inc., 3702 Glen Haven St., Houston, Tex. LB $674,801, flexible base and hot mix b. conc. 3.228 mi. Hy. U. S. 90, Proj. FI 1091 (7) and 1091 (6), Orange Co.;
Texas Bitulithic Co., P. O. Box 5297, Dallas, Tex., LB $123,119, hot mix b. conc. pavement wid'n and re-surf. 6.017 mi. Hy. U. S. 80, Proj. C 96-10-1, Harrison Co.;
West Texas Constr. Co., P.O. Box 1019, Lubbock, Tex., LB $119,613, seal coat 133.675 mi. C 145-1-12, Bailey, Castro, Swisher, Briscoe, Floyd, Crosby, Lamb, Hale and Lubbock Counties. Bids Jan. 14. CD 12/24 and 1/2.
▲† **Hillin & Pickens Constr. Co.,** 3641 Norfolk Rd., Fort Worth, Tex., LB$4,221,829, 500 Air Force Housing units, Wolters Air Force Base, ENG 41-443-53-28, MINERAL WELLS, TEX. U. S. Eng., 100 W. Vickery St., Fort Worth, Tex. Charles E. Armstrong, Life of America Bldg., Fort Worth, Tex., archt. Bids Jan. 15. CD 12/17.
City, Temple, Tex., Own Forces. $110,000, storm sewer, TEMPLE, TEX. CD 3/12/48.
City, City Hall, Temple, Tex., Own Forces. $70,000, street imprvs. and surf., TEMPLE TEX. CD 6/13/46.
▲† **Farnsworth & Chambers Co., Inc.,** Box 74, Houston, Tex., CA. $1,641,343. Maintenance hangar, Connally Air Force Base, Inv. No. ENG 41-443-53-24, WACO, TEX. U. S. Eng., 100 W. Vickery St., Fort Worth, Tex. Bids Jan. 8, awarded Jan. 14. CD 1/13, under LB.
▲ **Morrison-Knudsen Constr. Co.,** 319 Broadway, Boise, Idaho CA, grading;
Union Pacific R.R. Co., W. C. Perkins, ch. engr., 1416 Dodge St., Omaha, Neb., Own Forces, constr. over 10 mi. new double track west of Rawlins, WYOMING. Est. over $2,000,000.

BUILDINGS

LOW BIDS AND CONTRACTS

Lippert Bros. General Contractors, 2800 N. Santa Fe St., Oklahoma City, Okla., CA. $638,832, general contract West Junior High SCHOOL, PARSONS, KAN. Bd. Educ., Parsons, Kan. Bids Dec. 9, CD 12/30, under LB.
▲ **Robert E. McKee, General Contractor,** 1918 Texas St., El Paso, Tex., CA. Approx. $3,775,000, 18-story OFFICE, EL PASO, TEX. El Paso Natural Gas Co., Bassett Tower Bldg., El Paso, Tex. Bids Jan. 8. CD 12/9.
▲ **H. A. Simmons, Ltd.,** 16 E. Hastings St., Vancouver, B. C., CA. $17,500,000. design and construct PULP MILL; $1,000,000, WAREHOUSING, EVADALE, TEX. Houston Oil Co. and Time, Inc., Petroleum Bldg., Houston, Tex. (East Texas Pulp & Paper Co., parent owners, Petroleum Bldg., Houston, Tex.). CD 1/15 under CA.
Stamford Mill & Elevator Co., Stamford, Tex. Purchase and Hire. $135,000, reconstr. MILL and ELEVATOR, STAMFORD, TEX. CD 1/9.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

† **Wash., Pasco**—B.A. 2/13—U. S. Eng., 4735 E. Marginal Way, Seattle, Zone 4, 1,540 lin. ft. 24- to 30- in. clay and 60 ft. 30 in. welded steel sanitary and storm bypass sewer, Inv. 53-65.
† **Wash., Spokane**—SANITARY SEWERS—B.A. 2/21—U. S. Eng., 4735 E. Marginal Way, Seattle Zone 4, 2430 ft. 8 and 10 in. sanitary sewers at Fairchild Air Force Base, ENG 45-108-53-114. CD 7/18/51.
† **Calif., March Air Force Base**—REFUELING FACILITIES—B.A. 2/24—U. S. Eng., 751 S. Figueroa St., Los Angeles; addnl. refueling facilities, ENG 04-353-53-85. $750,000. CD 12/10/52.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

WASHINGTON—State Hy. Comn., Olympia,
A. W. Stevens, Burlington, Wash., LB, $64,380 twin rein.-con. girder bridges over Hamilton Rd. on Hy. 1, Lewis Co. Bids Jan. 13. CD 12/31.
▲ **WASHINGTON**—State Hy. Comn., Olympia,
Dahlgren Constr. Co., 1700 21 Ave. S., Seattle, Wash. LB, $1,248,057, est. $1,500,000 Rainier Ave. over-crossing at Atlantic St. on approach to Lake Washington floating bridge, King Co. Bids Jan. 13. CD 12/23.
▲ **WASHINGTON**—State Hy. Comn., Olympia,
C. E. Oneal, Ellensburg, Wash., LB, $80,860, draining, grading, surf. 3.267 mi. from Malaga to Alcoa plant, F.A.S.AS 0434 (2), Chelan Co.; LB, $198,165, bit. 3.853 mi. Hy. 10 East Wenatchee to Rock Island, Section 2, F.A.P.No.F. 030-1 (4), Douglas Co.;
Fiorite Bros., 1100 Leary Way, Seattle, Wash., LB, $305,158, clearing, draining, grading 2.784 mi. Hy. 1 E.B. Hamilton Rd. north F.A.P. BFI 001-2 (16), Lewis Co.;
C. A. Power, E. 915 Marietta St., Spokane, Wash., LB, $146,219, rein.-con. cribbing on 0.134 mi. Riverside State Park Rd., Spokane Co. Bid Jan. 13. CD 1/31.
P. S. Lord, 4507 S.E. Milwaukie St., Portland, Ore., LB, $76,973, 16,466 ft. concrete sanitary sewers in L.I.D.No. 74-S, VANCOUVER, WASH. City, City Hall, Vancouver, Wash. CD 7/26/45.
Valley Constr. Co., 7708 Rainer Ave., Seattle, Wash., CA, $86,501, est. over $60,000, 24,000 ft. sanitary sewers WHITE SALMON, WASH. Town, Town Hall, White Salmon, Wash. Bids Dec. 3. CD 11/20.
Pittsburgh-Des Moines Steel Co., 400 S. Spring St., Los Angeles, Calif., LB, $53,210 est. $40,000 furnish, install two 500,000 gal. and one 150,000 gal. welded steel water reservoirs, Lancaster, LOS ANGELES, CALIF. Waterworks District No. 4, Hall of Records, Los Angeles, Calif. Bids Jan. 6. CD 12/21/51.
▲ **P. & J. Artukovitch,** 13305 S. San Pedro St., Los Angeles, Calif., and **Mike Miller Co.,** 877 N. Bunker Hill, Los Angeles, Calif., LB, $1,050,641, est. $648,405 sanitary sewer trunk main, water main trunk line and water storage tank in Kearny Mesa Improvement District, SAN DIEGO, CALIF. City, Civic Center, San Diego, Calif. Bids Jan. 13. CD 12/30.
Olympian Dredging Co., 525 Market St., San Francisco, Calif., LB, $86,485, dredging portion of Stockton Channel for Transit Shed No. 9 STOCKTON, CALIF. Port of Stockton, 123 North El Dorado, Stockton, Calif.

BUILDINGS

LOW BIDS AND CONTRACTS

Harwick & Son, 2254 Cahuenga Blvd., Los Angeles, Calif., CA, $563,130, 1 story, rein.-con. tilt up WAREHOUSE and PIPE SHED, 2417 Malt St., LOS ANGELES, CALIF. Harper & Ryenolds Corp., 152 N. Main St., Los Angeles, Calif. Burke, Kober & Nicolais, 816 W. 5 St., Los Angeles, Calif., archts.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION

B. C. Steveston—FISHING HARBOR—B.A. 2/4—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont, fishing harbor (Cannery Channel Rock Dam) $500,000 Plans deposit $25. R. Blais, c/o owner, engr. CD 3/27.

SOON LETS CONTRACT—BUILDINGS

Ont., London—STORAGE DEPOT, etc.—W. L. Ballentine Co. Ltd., 380 Fleet St. W., Toronto, soon lets contract 1 story repair, storage depot, and showroom structure, on No. 2 Highway. $90,000. S. G. Chipman, 233 Dundas St., engr.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Logan Twp., Bornholm, Ont., Day Labor. $70,000. roads reconstruction, BORNHOLM, ONT. James Howes, Listowel, Ont., engr.
W. Groves, 12 Hilda St., Hamilton, Ont., CA. $40,000. water mains in new sub-division DUNDAS, ONT. Municipality, Dundas, Ont. MacKay & MacKay, 504 Imperial Bldg., Toronto, Ont., engrs.
S. McNally & Sons Ltd., 215 Rousseau Rd., Hamilton, Ont., CA. $43,000, water mains, HAMILTON, ONT. Municipality, City Hall, Hamilton, Ont. Awarded Jan. 8.
J. A. Campbell, 2487 W. Bloor St., Toronto, Ont., CA. $80,000, 400-car drive-in theater, Durham Rd. HANOVER, ONT. B. Fisher, 7 Inkerman St., Listowel, Ont.
International Water Supply Ltd., 12 Maitland St., London, Ont., CA. $225,000, WW, well, drilling, pump installation, pump and laying 12 in. main to corner Bronte and Main Sts., MILTON, ONT. Town, Town Hall, Milton, Ont. Awarded Jan. 9. CD 12/10.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Henry Borger & Son Ltd.,** 590 Pembina Hy., Winnipeg, Man., CA. Approx. $1,800,000, 200 homes in HOUSING project, ST. JAMES, MAN. I. B. Margolese & Co., Time Bldg., Winnipeg, Man. Awarded Jan. 12.
John Flood & Sons Ltd., 111 Princess St., St. John, N. B. Owner Builds. $400,000. HOUSING DEVELOPMENT on banks of Kennebasis River, Terryburn, ST. JOHN, N. B.
▲ **Rolmac Constr. Ltd.,** 41 King William St., Hamilton, Ont., CA. Approx. $1,000,000, APARTMENT BLOCKS near boundary of Nelson Twp., BURLINGTON, ONT. Joseph Rolka, 41 King William St., Hamilton, Ont.
Arthur Slightham & Son, 26 Kennedy Park Rd., Toronto, Ont. Owner Builds. $350,000 two 19 suite, 3 story, bsmnt., brick, concrete APARTMENTS, Bayview Ave. near Donegal Dr., TORONTO, ONT. Barnett & Rieder, 644 Bayview Ave., Toronto, Ont., archts.
▲ **J. F. Robillard,** 982 5 Ave., Verdun, Que., Owner Builds. $3,750,000, 300 BUNGALOWS in western end of LASALLE, (Postal District Montreal) QUE.
J. Serrentino Constr. Ltd., 6660 Blvd. Decarie, Montreal, Que., CA. $325,000, 1 story, 125x155 ft., rein.-con., structural steel, brick BOILER SHOP, MONTREAL, QUE. Canadian Vickers Ltd., 4970 E. Notre Dame St., Montreal, Que. Bids Dec 30., awarded Jan. 9. CD 1/2/24.

PUERTO RICO

BIDS ASKED--HEAVY CONSTRUCTION

† **Puerto Rico, Aguadilla**—WATER TREATMENT PLANT B.A. On Or About 3/3—U. S. Eng., P. O. Box 4970, Jacksonville, Fla. water treatment plant, Ramey Air Force Base, Serial No. ENG 08-123-53-42.

BUILDINGS

LOW BIDS AND CONTRACTS

Zequeira & Pinero, Inc., Box 191, Hato Rey, Puerto Rico, CA. $890,002, est. $827,365, 124 DWELLING units, LOIZA (Canovanas), PUERTO RICO, Puerto Rico Housing Auth., Rio Piedras. Fullana Eng. Corp., Santurce, Puerto Rico, engrs. Bids Oct. 21. CD 9/25.
Font & Montilla, Inc., Santurce, Puerto Rico, CA $566,400. 74 units HOUSING, Proj. PR 3-36, BARCELONETA, PUERTO RICO. Puerto Rico Housing Auth., Rio Piedras, Puerto Rico, Guillermety & Ortiz, Inc., P. O. Box 4789, San Juan, Puerto Rico, engr. Bids Oct. 10. CD 9/25.
Nolla & Galib, Box 4472, San Juan, Puerto Rico, CA $583,489, est. $550,030, 80 unit HOUSING, Proj. PR 3-66, RIO GRANDE, PUERTO RICO. Puerto Rico Housing Auth., Rio Piedras, Puerto Rico. Fullana Eng. Corp., Santurce, Puerto Rico, engrs. Bids Oct. 15. CD 9/25.
Felix A. Leon, Inc., 202 Tous Soto St., Hato Rey, Puerto Rico, CA. $812,000, est. $776,623, 110 unit HOUSING, Proj. PR 3-67, SANTA ISABEL, PUERTO RICO, Puerto Rico Housing Auth., Rio Piedras, Puerto Rico. Fullana Eng. Corp., Santurce, Puerto Rico, engrs. Bids Oct. 6. CD 9/25.

U. S. POSSESSIONS

BUILDINGS

LOW BIDS AND CONTRACTS

▲† **Caribbean Enterprises Corp.,** P. O. Box 6186, Loiza St. Sta., Santurce, Puerto Rico, LB, $1,541,898, Group 1, Sect. A, Charlotte Amalie High School;
Republic Constr. & Maintenance Co., Inc., P. O. Box 9126, Santurce, Puerto Rico, LB $1,458,730, Group 2, Sect. A, Christiansted Consolidated SCHOOL, ST. THOMAS and ST. CROIX, VIRGIN ISLANDS. Office of Territories, Dpt. Interior, Interior Bldg., Wash. 25, D. C. Bids Jan. 12. CD 10/29.

Proposed Projects

WATER SUPPLY

Ala., Ozark—City, addn. water facilities $384,000.
▲ **Colo., Brighton**—South Adams Co. Water District, Derby, voted bonds, water lines and water treatment plant. $1,500,000. Ripple & Howe, 426 Cooper Bldg., Denver, consult. engrs. and archts. CD 12/18.
Ind., Hartford City—Bd. P. Wks., Mayor Wm. Smith, chn. City Hall, WW imprvs. and sewage disposal sys., elevated steel tank, water softener, chlorinator meters, mains and sewage disposal. $300,000. CD 3/29/46.
Mich., Bay City—City, Municipal Water Dpt., 2 larger water main crossings via river to east side, $625,000; municipal pumping station imprvs., incl. complete electrification, $450,000; water mains to supply Lincoln Park sub-division, $55,000, Ayres, Lewis, Norris & May, 500 Wolverine Bldg., Ann Arbor, consult engrs. CD 10/30/50.
Mich., Lansing—City, Bd. Water & Electric Light Comrs., 116 W. Ottawa St., lime reclaiming plant for Water Dpt., $455,000, pumping station, c.i. water mains, completion electric driven pumping station, Cedar Street Pumping Station, $55,000, Otto E. Eckert, c/o owner, engr.
▲ **Tex., Corpus Christi**—City, City Hall, water plant expansion, Calallen. $1,500,000. Myers & Noyes, Wilson Bldg., consult. engrs. CD 11/5/43.

SEWERS, WASTE DISPOSAL

Calif., Long Beach—City, 205 Broadway, S. D. Pump Dist. No. 3, Unit 5, (1) 37 St. Storm drain (2) Wardlow Road storm drain (3) S.D. Pump Dist. No. 3, Unit 5 Frog Pond, $650,000, Moffatt & Nichol, Inc., 122 W. 5 St., consult. engr.; remaining portions of S.D. Pump Dist. No. 3, $650,000, J. H. Davis, 730 E. 3 St., consult. engrs. Golf Course storm drain, $110,000, Chas. P. Morgan & Assoc., Farmers & Merchants Bldg., consult. engrs. CD 1/12/50.
▲ **Colo., Brighton**—South Adams County Sanitation Dist., Derby, defeated bonds, sewer lines and sewage treatment plant. $1,050,000. Ripple & Howe, 426 Cooper Bldg., Denver, Colo., consult. engrs. and archts. CD 12/18.
Fla., St. Cloud—City, City Hall, voted bonds, sanitary sewerage imprvs. $400,000. CD 12/15.
▲ **Ind., Bedford**—Bd. P. Wks., Mayor I. H. Brinegar, chn., City Hall, sewage treatment plant, sewerage sys. imprvs, extensions. $2,000,000. Bevington, Taggart & Fowler, 730 Ind. Pythian Bldg., Indianapolis, Zone 4, consult. engrs. CD 12/20/46.
Ind., Kokomo—City, City Hall, imprv. sewage disposal plant. $500,000. L. A. Warden, City Hall, city engr.
▲ **Kan., Kansas City**—City, City Hall, 805 N. 6 St., re-build entire city sewerage sys. and funnel it into central disposal sys. $50,000,000. CD 12/12/50.
Mo., Warrensburg—City, 2 sewage disposal plants, sanitary and storm sewer lines, etc. $452,100-$600,000. CD 7/12/46.
Tenn., Shelbyville—City, addnl. sanitary sewers and disposal plant. $300,000.
▲ **Va., Alexandria**—Alexandria Sanitary Auth., City Hall, sewage treatment plant, interceptor lines, $7,000,000-$9,000,000. Greeley & Hansen, 220 S. State St., Chicago, 4, Ill., consult. engrs. C. L. Watkins, c/o owner, city engr. CD 12/15.
Va., Covington—City, City Hall, bond election Feb. 3, sanitary sewer imprvs. $500,000. CD 1/12.

BRIDGES

SOUTH CAROLINA—State Hy. Dpt., Columbia,
Richland Co.—four-lane underpass under Southern Ry. embankment on Harden St. in city of Columbia. $500,000.
▲ **Va., Petersburg**—City, bridge over Appomattox River. $1,000,000.

STREETS AND ROADS

GEORGIA—State Hy. Dpt., 2 Capitol Sq. Atlanta, Chattooga Co.—Imprv. Summerville-Trion Road, Summerville, $315,000.

▲ **Ga., Marietta**—Comrs. Cobb Co., Court House, 1953 road imprvs. $1,000,000.

▲ **INDIANA**—Indiana Toll Road Comn., State House Annex, Indianapolis,
250 mi. 4-lane divided expressway to connect with Ohio Turnpike at pt. south of U.S. 20 to Illinois Line south of Gary. $150,000,000. Parsons, Brinckerhoff, Hall & Macdonald, 51 Broadway, New York 6, N. Y., consult. engrs. on traffic studies. J. E. Greiner Co., 1106 N. Charles St., Baltimore, Md., consult. engrs. on costs and routing. CD 12/8/43.

▲ **Kan., Kansas City**—City Comrs., City Hall, 805 N. 6 St., addnl. to complete restoring 1951 flood damaged streets, sidewalks, street lighting, $1,087,425. CD 6/12/46.

▲ **Louisiana**—Ascension Parish, Donaldsonville; Iberville Parish, Plaquemine; Lafayette Parish, Lafayette; St. James Parish, Convent, and St. Martin Parish, St. Martinville, plan 165 mi. 4-lane toll highway between Lutcher and Lafayette, with 17 bridges, incl. steel bridge over Mississippi River at Donaldsonville, Atchafalaya River and Floodway and Morganza Floodway, $90,000,000, Palmer & Baker, Inc., consult. engr., National Bank Commerce Bldg., New Orleans, will design and supervise construction.

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Amesbury—hy. and bridges final link in Newburyport Expressway, approx. 18,039 ft. bridges over Evans Place cut-off over Elm St. and over B & M R.R. in Amesbury; underpass of Main St. in Salisbury, Merrimac River to N. H. State Line. $3,000,000.
Mich., Mason—Ingham Co., Bd. Rd. Comrs., Mason, reconstr., blacktopping 42 mi. county roads, local roads, $158,000, primary roads, $450,000, major projs. 6.5 mi. Hassett Rd., 3.5 mi. Onondaga Rd. 1953 program. Frank Evans, co. engr. CD 12/4/51.
Mich., Pontiac—Bd. Road Comrs. Oakland Co., S. D. Lomerson, chn., 33 mi. road work on various county roads, $945,000. CD 11/12/51.

EARTHWORK, WATERWAYS

▲† **Kansas**—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., Glen Elder Dam on Solomon River, $36,881,000; Wilson Dam on Saline River, Smoky Hill Div., $15,294,000. CD 5/25/44.

▲† **Kansas**—U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo., Cedar Point Dam on Cedar Creek, 2 mi. from Cedar Point. $6,000,000.

▲† **Kansas**—U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo., Strawn Dam on Grand (Neosho) River, 1½ mi. northwest of Strawn for flood control, $38,000,000.

▲† **Montana**—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., Yellowtail Dam on Big Horn River, $114,039,000. CD 5/25/44.

AIRPORTS

▲† **Idaho, Mountain Home**—OPERATIONAL APRON, etc.—U. S. Eng., City-County Airport, Walla Walla, Wash. operational apron, $1,750,000; maintenance apron, $1,250,000; runway, strengthening, utilities, central heating plant, refueling apron, Approx. $500,000 to $1,000,000 each; strengthening parking apron, strengthening taxiway, airfield lighting, training bldg., laundry and dry cleaning bldg., officers' mess, post exchange, chapel, 2.5 mi. road, hydrant refueling aviation gas storage, jet fuel storage, apron grid duct, $100,000 to $500,000 each; bakery, utilities, receiver bldg., transmitter bldg., UHF/DF radio homing beacon, $100,000 each, Mountain Home Air Force Base.

▲† **Ill., Scott Air Force Base**—HOSPITAL, etc.— U. S. Eng., Merchandise Mart, Chicago, hospital, $4,821,000; water supply, etc., $1,100,000. CD 6/29/51.

LATIN AMERICA

▲ **Colombia**—Instituto Nacional de Fomento Municipal, Bogota, program for 1953 to cost $10,000,000 includes 107 aqueducts, 137 electrical projects, 35 sewers, 69 schools, 9 hygiene centers and 5 hospitals at various locations.

PUBLIC BUILDINGS

▲ **Ark., Little Rock**—SCHOOL IMPRVS.—Little Rock School Dist., City Hall, bond election Mar. 15, school imprvs. $4,000,000. CD 1/14.

▲ **Conn., Hartford**—LIBRARY—City, Carlton F. Sharpe, mgr., 550 Main St., plans by Shultz & Goodwin, 12 Hayne St., library, Whitehead Highway at Sheldon Arch and Prospect Sts. $2,200,000. CD 6/21/51.

▲ **Conn., Hartford**—POLICE COURT etc.—City, Municipal Bldg., 550 Main St., plans by Willard Wilkins & Maurice H. Golden, 945 Asylum Ave., 4 story brick, steel, concrete, Police Court Bldg. and Garage, Old Brown School Bldg., Market St. $1,500,000. Henri Van Zelm Assoc., 197 Asylum St., Hartford, mech. engrs. Robert W. Loomis, 32 Maple Ave., Windsor, structural engr. 8/5/49.

▲ **D. C., Wash.**—HEADQUARTERS—Canadian Government, Canadian Embassy 1746 Massachusetts Ave. N.W., plans by Marani & Morris, 1250 Bay St., Toronto, Ont., headquarters building for occupancy for Canadian Joint Staff Mission, 2450 Massachusetts Ave. N.W. Approx. $1,000,000. Faulkner, Kingsbury & Stenhouse, Ring Bldg., assoc. archts.

▲ **Fla., Jacksonville**—SCHOOLS—Duval Co. Bd. P. Instruction, 605 Ocean St., Kings Road School, $525,000; Wilder Park School $525,000. CD 10/10/49.

Ga., Summerville—HOUSING—Summerville Housing Auth., Summerville, 100 housing units. $750,000.

▲ **Ill., Chicago**—HOUSING—Chicago Housing Auth. 608 S. Darborn St., Zone 5, plans by Shaw, Metz & Dolio, 208 S. La Salle St., Zone 4, 19 story apartment, and 22 two-story row houses, 14 St. and Racine Ave. $5,600,000. CD 2/2/50.

Ill., Joliet—SCHOOL—Joliet Bd. Educ., plans by J. E. Coyle, 215 Herkimer St., Junior High School, $500,000.

Ind., Alexandria—SCHOOL—Alexandria School Holding Corp., Alexandria, elementary school, $500,000.

Ind., Columbus—SCHOOL—Bd. School Trustees, Columbus, plans by McGuire & Shook, 1400-01 Fletcher Trust Bldg., Indianapolis, Zone 4, 1 story, bsmnt., brick, gymnasium addn. to high school. $750,000. CD 12/18.

Ind., Lapel—SCHOOL—Lapel School Holding Corp., Lapel, Elementary, Junior and Senior High School for Lapel and Stony Creek Twp. $700,000. CD 10/8/51.

▲ **Ind., Richmond** — SCHOOLS — Bd. Educ., 3 grade schools, $1,250,000. CD 7/19/46.

Ky., Richmond—SCHOOL—Madison Co. School Bd., Richmond, plans by John F. Wilson, Wellington Arms Apartments, Lexington, Central High School, $550,000.

La., Bastrop—SCHOOL—Morehouse Parish School Bd., high school, $500,000. CD 12/13/51.

▲ **La., Gretna**—SCHOOLS—Jefferson Parish School Bd., plans by Wm. R. Burk, 632 Pirates Alley, New Orleans, East Bank High School, $1,500,000; West Bank High School, $1,500,000. CD 1/11/50.

▲ **La., Lake Charles**—COURT HOUSE, etc.—Calcasieu Parish Police Jury, bond election Apr. 1, court house and jail addn. $3,000,000. Dunn & Quinn, Lake Charles, archts. CD 3/10/49.

Md., College Park—FRATERNITY HOUSES—University of Maryland, College Park, plans by Ross, Walton & Madden, 3510 Rhode Island Ave. N. W., Wash., D. C., 10 fraternity houses. $900,000.

Mass., Burlington—SCHOOL—Town, Albert E. Wilde, chn., Bldg. Comn., plans by Edgar T. P. Walker, 131 State St., Boston, and Theodore B. Hanna, assoc. archt., 131 State St., Boston, brick, steel, concrete elementary school, Winn St. $600,000. CD 11/14.

▲ **Mass., Malden**—HOUSING—Malden Housing Auth., G. M. Edward, chn., 90 Plainfield St., 150 housing units. $1,500,000.

▲ **Mass., North Adams**—HOSPITAL—North Adams Hospital, Hospital Ave., plans by Leland & Larsen, 814 Statler Bldg., Boston, hospital, Hospital Ave., $1,850,000. Shepley, Bulfinch, Richardson & Abbott, 1 Court St., Boston, consult. engrs. CD 3/19/51.

Mich., Algonac—SCHOOL—Bd. Educ., Algonac School Dist., plans by Maul & Lentz, 1222 Michigan Bldg., Detroit, 2 story, bsmnt., brick, steel Junior High School, $800,000. CD 12/31.

▲ **Mich., Redford**—SCHOOL etc.—Redford Twp., John Turner, secy. Redford School Dist., plans by Giffels & Vallet, Inc., 1000 Marquette Bldg., Detroit, 2 story, bsmnt., brick, steel, concrete high school and auditorium, Schoolcraft and Beech Sts., $1,750,000. CD 12/12.

▲ **Mo., Raytown**—SCHOOL—Bd. Educ., Raytown Dist., Joe Herndon, supt., Raytown, bond election Feb. 14, elementary school, 81 St. and Raytown Rd., field house and addnl. rooms at high school. $1,000,000.

▲ **Mo., St. Louis**—WORKHOUSE—City, Frank J. McDevitt, pres. Bd. P. Service, 304 City Hall, 12 and Market Sts., Zone 3, rein.-con., brick, steel stone workhouse to replace present institution, Broadway and Meramec St. $4,000,000. CD 4/26/43.

▲ **Neb., Lincoln**—TEACHERS COLLEGE—University of Nebraska, Bd. Regents, 12 and R Sts., Lincoln, plans by L. A. Daly & Co., Insurance Bldg., Omaha, teachers college on campus, $1,000,000. CD 2/28/52.

▲ **N. C., Durham**—SCHOOLS—Durham Co. Bd. Educ., Court House, plans by George Watts Carr, Durham, North Consolidated High School, $534,000; plans by Archie Davis, Durham, South Consolidated High School, $580,000; plans by R. R. Markley, Durham, Peastown Elementary School, $300,000. CD 11/7.

▲ **O., Columbus**—EXPOSITION—State of Ohio, State Office Bldg., S. Front St., exposition bldg., Ohio State Fairgrounds. $1,000,000.

▲ **O., Columbus**—FIELD HOUSE—State of Ohio, State Office Bldg., S. Front St., plans by Howard Dwight Smith, 1950 Arlington Ave., 260 x 260 ft. 15,000 seating capacity field house, one wing 150 x 160 ft., another wing 200 x 420 ft., stone, steel, concrete constr., Ohio State University. $1,500,000. CD 11/17/44.

▲ **O., Toledo**—SCIENCE-ENGINEERING CENTER—University of Toledo, Dr. Asa S. Knowles, pres., 2801 W. Bancroft St., plans by Bellman, Gillett & Richards, 518 Jefferson St., science-engineering center; student union bldg. addn., athletic field house imprvs. $135,000 at University of Toledo. $1,000,000.

▲ **Pa., Phila.**—HOUSING—Phila. Housing Auth., 42 S. 15 St., Hunting Park Proj., K St. and Hunting Park Ave., $2,000,000; Jackson Proj., Jackson and Sanger Sts., $1,000,000; Whitehall Proj., Jackson and Valley Sts., $800,000; Castor Proj., Adams Ave., above Tacony Creek, $2,500,000. CD 9/12/49.

R. I., Kingston—STUDENT UNION—State Dpt. Educ., 205 Benefit St., Providence, plans by Howe, Prout & Ekman, 17 Custom House St., Providence, student union bldg., State College. $500,000. CD 9/1/43.

▲ **Tenn., Chattanooga**—HOUSING—Chattanooga Housing Auth., 2600 Fourth Ave., plans by Selmon T. Franklin and Bianculli & Palm, 420 Poplar St., 402 housing units. $5,800,000. CD 3/19.

▲ **Tenn., Knoxville** — ARMORY, etc. — University of Tennessee, Knoxville, armory-dormitory, $2,000,000. CD 8/30/43.

† **Tenn., Oak Ridge**—HIGH SCHOOL—Atomic Energy Comn., Oak Ridge plans by Sargent, Webster, Crenshaw & Folley, Watertown National Bank Bldg., Watertown, N. Y., Robertsville Junior High School. $600,000. CD 8/12/48.

▲ **Tex., Corpus Christi**—HIGH SCHOOL—Corpus Christi Independent School Dist., 515 N. Carancahua St., plans by Smyth & Smyth, Gulf Security Bldg., Carl Hamlin Junior High School. $1,250,000.

▲ **Tex., Galveston**—LABORATORY, etc.—University of Texas School of Medicine, c/o University Bd. Regents, Austin, plans by Mark Lemmon, Bankers Mortgage Bldg., Dallas, animal laboratory, $1,250,000; medical science classrooms bldg. $775,000; Gail Borden classrooms addn. $1,250,000; auditorium, $1,000,000; gymnasium, $750,000. CD 12/18.

▲ **Va., Arlington**—SCHOOLS—Arlington Co. School Bd., 1426 N. Quincy St., plans by Allen J. Dickey, 704 N. Glebe Rd., Glencarlyn School, $450,000, Beall & LeMay, 1726 "M" St. N. W., Wash. D. C., consult. engrs.; plans by Rhees E. Burket, 1223 Connecticut Ave. N.W. Wash., D. C., brick, concrete masonry Williamsburg School, $750,000.

▲ **Wash., Everett**—SHOPS, etc.—Snohomish County Public Utility Dist., Everett, shops, line headquarters and warehouse, $350,000; office bldg., $650,000.

Wash., Toppenish—GYMNASIUM—School Bd., Toppenish, gymnasium addn. to high school. $548,522. CD 2/16/49.

▲ **Wash., Yakima**—LIBRARY—Yakima Regional Library Bd., Yakima, 4 story, bsmnt., 140x200 ft., masonry library, $1,500,000. CD 11/20/46.

Wyo., Cheyenne—SCHOOL—School District 1, Laramie Co., plans by Kellogg & Kellogg, consult. engrs. and archts., 1909 Carey Ave., 2 story Junior High School, $500,000. CD 2/8/50.

▲ **Man., Winnipeg**—HOSPITAL WING—Misericordia Hospital Bd., Cornish Ave., 6 story nurses residences, Cornish Ave. and Maryland Sts., new wing on Cornish Ave. and Sherbrooke St. for 200 patients, $1,250,000. CD 1/24/52.

Ont., Ottawa—LABORATORIES, etc.—Atomic Energy Ltd., Port Hope, plans by E. A. Gardner, c/o Dpt. P. Wks., Hunter Bldg., laboratories and other building for Cobalt 60 and other radio-active equipment, $500,000.

COMMERCIAL BUILDINGS

▲ **Colo, Denver**—OFFICE and CLUB—John D. and Clint W. Murchison, 1615 Federal St., Dallas, Tex., plans by Raymond H. Ervin & Robert Berne, Patterson Bldg., 20 story, 125x125 ft. office and club building, $6,000,000. Technic Engr. Co., 1909 N. Harwood St., Dallas, Tex., consult. engr.

▲ **Colo., Denver**—RETAIL STORE—Sears Roebuck Co., 1740 Broadway, retail store in four block area between East First and Second Aves. near University Blvd. $3,500,000.

Ga., Atlanta—MEMORIAL—Henrietta Eggleston Hospital for Children, 640 Forrest Rd. N. E., Sam Finley Memorial Building, $600,000.

Ga., Augusta—RESIDENCES—Garden City Development Co., c/o G. Lloyd Preacher & Assoc., archt., 843 Peachtree St. N. E., Atlanta, 75 residences, $750,000.

▲ **Ill., Chicago**—APARTMENT—Liberty National Bank, trustee, 3158 W. Roosevelt Rd., 80 unit apartment, 1138 to 1150 Lake Shore Dr., $1,000,000.

Ill., Chicago — SCHOOL — St. Benedicts Parish, Irving Park Rd. and Bell Ave., plans by Gaul & Voosen, 228 E. Superior St., Zone 11, school, 3921 W. Bell St. $600,000.

Ky., Covington — SCHOOL — Diocese of Covington, Madison Ave., plans by Carl Bankemper & Assoc., 132 Morris Rd., Lookout Heights, Covington Catholic High School, Dixie Hy., near Old State Rd. $700,000.

▲ **Mich., Battle Creek**—HOSPITAL—Leila Hospital Bd. Trustees, Battle Creek, 2 story, brick, steel concrete wing hospital addn. $1,750,000.

▲ **Mich., Dearborn**—SHOPPING CENTER—Sam'c, Inc., 520 Bates St., Detroit, plans by Theodore Rogvoy, 929 Fox Bldg., Detroit shopping center, incl. 3 story department store, Michigan and Schaeffer Sts. $2,500,000.

▲ **Miss., Jackson**—BANK and OFFICE—First National Bank, 329 E. Capitol St., 25 story bank office, $13,000,000.

▲ **N. J., Jersey City**—OFFICE—Concourse Terminal Corp., c/o Spear & Co., Inc., 225 Fifth Ave., New York 10, N. Y., plans by Vincent J. Cerrata, 665 Newark Ave., Jersey City, 15 story office, 25 Concourse East, Journal Square. $6,000,000.

N. Y., Brooklyn—APARTMENT—Dorchester House, Inc., 690 Flatbush Ave., plans by Philip Birnbaum, 12 E. 48 St., New York, Zone 17, 6 story apartment, 411-35 E. 18 St. $725,000.

N. Y., Brooklyn—APARTMENT—207 Apartments, Inc., 550 Flatbush Ave., Zone 25, plans by Schulman & Soloway, 100-15 Queens Blvd., Forest Hills, 6 story apartment, 3101-23 Aurelia Court. $750,000.

N. Y., New York—OFFICE—Architects Offices, Inc., 101 Park Ave., Zone 17, plans by Tuck & Eipel, 101 Park Ave., and O'Connor & Kilham, 101 Park Ave., Zone 17, altering 101 Park Ave. office. $600,000.

▲ **N. Y., New York**—CHURCH—Concord Baptist Church of Christ, 367 Putnam Ave., Zone 21, plans by Daniel D. Merrill, 125 Broad St., New York, Zone 4, church, 833-47 Marcy Ave. and 289-94 Madison St. $1,000,000.

▲ **N. Y., New York**—APARTMENT—Gold Coast Realty Corp., 36 W. 44 St., Zone 36, plans by H. I. Feldman, 415 Lexington Ave., Zone 17, 12 story apartment, 1493-1509 York Ave. between 79 and 80 Sts. $2,250,000.

N. Y., New York—APARTMENT—Loyedlo Realty Corp., 525 Tiffany St., Zone 59, plans by H. Herbert Lilien, 201 W. 72 St., Zone 23, 6 story apartment, Johnson Ave., north of 236 St. $625,000.

▲ **O.,Columbus**—STORE, etc.—Sears, Roebuck & Co., W. Arthington and S. Homan Sts., Chicago, Ill., store and warehouse, 36-acre tract Dublin Rd. at Olentangy River Rd., incl. 2 overpasses to cross Dublin and Olentangy River Rds., parking areas. $15,000,000. CD 7/29/48, under Industrial Buildings.

▲ **Tex., Abilene**—DORMITORIES, etc.—Hardin-Simmons University, Abilene, plans by F. C. Olds & Co., Abilene, mens dormitory, $450,000; womens dormitory, $450,000; classrooms, $400,000; dining hall, $400,000; heating plant $90,000. CD 8/2/51.

▲ **Tex., Dallas**—OFFICE—Leo F. Corrigan, Mercantile Bank Bldg., plans by White & Prinz, 1330 N. Industrial Blvd., 50 story office. $13,500,000. Chappell & Brenneke, Burt Bldg., consult. engrs. CD 10/16.

Tex., Houston—LODGE—Masonic Lodge, c/o Milton McGinty, archt., 2425 Ralph St., 3 story masonry lodge. $500,000.

▲ **Tex., Houston**—Y.M.C.A. BUILDINGS—Young Men's Christian Assn., 1600 Louisiana St., plans by Milton McGinty, 2424 Ralph St., Y.M.C.A. bldg. for Negroes, Bagby St., $500,000; East End Y.M.C.A. bldg, $300,000; Northwest Y.M.C.A. bldg., $300,000, Northside Branch Y.M.C.A. bldg., $300,000 foregoing of rein.-con., masonry constr.; 72-acre camp, playgrounds, swimming pool, Wimberly,$85,000; 55-acre camp, playgrounds, swimming pool, (Negroes), 24 mi. north of here, $90,000. CD 3/25.

▲ **Tex., Lubbock**—STORE—Dunlap's, c/o Retha Martin, 901 Broadway, plans by Butler-Brasher, 412 Avenue M, 2 story bsmnt, brick, hollow tile department store, rein.-con. pier, beam and slab. fdn. $1,200,000. CD 1/6/50.

▲ **Va., Arlington** — APARTMENT — Larchmont Constr. Corp., 1073 W. Broad St., Falls Church, plans by Edward M. Pitt, 2330 Wilson Blvd., 3 story, brick, concrete masonry apartment. $1,000,000. Donald Lindsay, c/o owner, engr.

▲ **Va., Falls Church**—HOTEL—Horne Properties, 6308 Williston Dr., plans by Corning & Moore, 1726 "M" St. N.W., Wash., D. C., 280 room hotel. $2,500,000.

▲ **Va., Springfield**—RESIDENCES—B & B Constr. Co., 1010 Vermont Ave. N. W., Wash., D. C., plans by M. L. Bagley, 8155 Connecticut Ave., Chevy Chase, Md., 140 one and two story brick, concrete masonry residences. $1,820,000. Edward R. Carr, c/o owner, engr.

▲ **Wash., Seattle**—DEPARTMENT STORE—I. Magnin & Co., Geary at Stockton Sts., San Francisco, Calif., plans by Naramore, Bain, Brady & Johanson, 904 7 Ave., rebuilding 4 story Kelley Bldg.; 6 Ave., and Pine St. for department store, $3,000,000.

▲ **Wash., Seattle**—HOUSING UNITS—Mutual Housing Co. 2017 W. 57 St., 200 duplex housing units, Waters Ave. and Bangor St. $4,000,000.

Ont., Cornwall—APARTMENT—Mulhern Estate, c/o G. A. Stiles, 102 Pitt St., 48-suite apartment. $500,000.

▲ **Ont., Ottawa**—DWELLINGS, etc.—Develop. Groupe, c/o Honeywell, Baker, Gibson & Wetherspoon, 56 Sparks St., 700 families and regional shopping center incl. single homes, multiple family units, etc. on northern section of Honeywell Farm, Woodroffe, $7,000,000.

Ont., Toronto—APARTMENT BLOCK—Reuben R. Dennis, 125 Kilbarry Rd., plans by E. I. Richmond, 455 Spadain Ave., 7 story, 80 suite apartment block Avenue Rd. near Cottingham St. $650,000.

Ont., Toronto—APARTMENT—Samuel L. Shields, 15 Hawarden Cres., plans by E. I. Richmond, 455 Spadina Ave., 10 story, 121-suite apartment, 9-15 Charles St. E. $500,000.

INDUSTRIAL BUILDINGS

Ga., Augusta—WAREHOUSE, etc.—Electrical Equipment Co., 624 Ellis St., plans by Eve & Stubb, Masonic Temple Bldg., warehouse and shop. $500,000.

▲ **Ill., Chicago**—FREIGHT HOUSE—John I. Hay Co., 332 S. Michigan Ave., Zone 4, barge line freight house, 2700 Robinson and Chicago Ship Channel, $1,250,000.

Ill., Chicago—FACTORY—I L G Electric Ventilating Co., 2850 N. Crawford Ave., plans by Friedman, Alschuler & Sincere, 223 Jackson Blvd., Zone 6, 35,000 sq. ft. factory addn. $500,000.

▲ **Ill., Waukegan**—FACTORY—American Can Co., 100 Park Ave., New York, 17, New York, machine shop factory addn. $6,350,000.

▲ **Me., Millinocket**—MILL—Great Northern Paper Co., L. E. McLeod, 6 State St., Bangor, masonry paper mill, East Millinocket. $6,000,000. Charles T. Main, Inc., 80 Federal St., Boston, Mass., consult. engr. CD 3/6/52.

▲ **Ore., Riddell**—PLANT—The M. A. Hanna Co., Leader Bldg., Cleveland, O., ferro nickel processing plant. $17,000,000-$21,000,000.

▲ **S. C., Anderson**—BAKERY—American Bakeries Co., 10 Pryor St. Bldg., Atlanta, Ga., plans by Stevens & Wilkinson, 157 Luckie St. N.W., Atlanta, Ga., bakery $1,000,000.

▲ **S. C., Charleston**—PLANT—Esso Standard Oil Co., 300 Gervais St., Columbia, lubricating oil canning plant, incl. three 20,000 bbl. storage tanks for aviation gasoline, pipe lines and appurtenances, $1,001,500.

Tex., Dallas—PLANT—Texas Air Xebec, Inc., Nolte Natl. Bank Bldg., Houston, helicopter service plant. $500,000.

Tex., Houston—STORAGE and PARKING—National Bank of Commerce, Natl. Bank of Commerce Bldg., plans by J. Russ Baty, Box 1414, multi-story, steel, brick on hollow tile garage storage and parking bldg., adjacent to bank bldg. $750,000. Robert J. Cummins, 1208 Bankers Mortgage Bldg., consult. engr.

▲ **Tex., Orange**—CHEMICAL PLANT—Goodrich Gulf Chemicals, Inc., Orange, (Parent Owners, B. F. Goodrich Co., 500 S. Main St., Akron, O., and Gulf Oil Corp., Port Arthur, Tex.) addnl. petrol chemical plant units. $60,000,000.

▲ **Tex., Texas City**—PLANT—Monsanto Chemical Co., & Heyden Chemical Corp., 1700 S. 2 St., St. Louis 4, Mo., plant to mfg. methanol, 25,000,000 gal. capacity annually. $8,500,000.

▲ **Utah, Price**—ELECTRIC PLANT—Utah Power & Light Co., Kearns Bldg., Salt Lake City, Zone 10, 66,000 kw. steam electric plant, at Carbon County coal fields, near here, exact site not selected. $10,000,000.

▲ **Va., Mt. Vernon**—PLANT—National Electronics Laboratory, Inc., 1707 Kalomar Rd. N. W., Wash., D. C., plans by The Austin Co., 16112 Euclid Ave., Cleveland, O., 1 story, masonry electronics plant, near here. $1,000,000.

▲ **Wash., Seattle**—OIL REFINERY—Shell Oil Co., 1219 Westlake Ave. N., oil refinery. $75,000,000.

▲ **Wis., Green Bay**—YEAST EXTRACTION PLANT—Hobert Paper Mills, Inc., 800 Elm St., yeast extraction plant, tunnel 3,200 ft. x 6½ ft. square, remodeling at pulp mill, $2,500,000. Helmick & Lutz, 405 Essex Bldg. Minneapolis, Minn., consult. engrs. CD 3/14/50.

Philippines, Manila—PLANT—Jacinto Rubber & Plastics, Inc., c/o Hermogenes Jacinto, Manila, plans plant to mfg. automobile tires. $500,000.

UNCLASSIFIED

▲ **Arkansas** — TRANSMISSION LINES, etc. — Southwest Power Administration, Ozark, transmission line from Ozark to Russellville, $390,000; Ozark Substation addn., $410,000; completing electric power transmission program to provide interconnections with private utilities. $385,000.

Ga., Dalton—NATURAL GAS SYSTEM—City, City Hall, natural gas system. $900,000.

Ga., LaFayette—NATURAL GAS SYSTEM—City, City Hall, natural gas system. $700,000.

Ga., Summerville—NATURAL GAS SYSTEM—City, City Hall, natural gas system. $900,000.

▲ **Ia., Des Moines**—LIVE STOCK PAVILION—State Fair Bd., Fair Grounds, E. Grand St., livestock pavilion at State Fair Grounds, $1,800,000.

▲ **Kansas**—NATURAL GAS STORAGE—Cities Service Gas Co., J. L. Willard, oper., First National Bldg., Oklahoma City, Okla., natural gas storage proj., 315,000 ft. 4- to 16-in. pipe line, Old McLouth gas field expansion, 9 mi. northwest of Longanoxie, Leavenworth and Jefferson Counties, $4,000,000. CD 6/7/46.

▲ **Mich., Lansing**—ELECTRIC DISTRIBUTION—City, Municipal Lighting Dpt., 116 W. Ottawa St., electric dist. work incl. new cables to provide power GM jet plant, state office bldg., Lansing Drop Forge Plant, new service to East Lansing and Everett Dist., switching equipment, transformers, $1,100,000, Otto E. Eckert, Bd. Electric Light Comn., Lansing, engr.

N. Y., Albany—TELEVISION STATION—Patroon Broadcasting Co. (WPTR), Hotel Ten Eyck, television station, $445,000. A. D. Ring & Co., Munsey Bldg., Wash., D. C. consult. engrs.

Ohio—RURAL DISTRIBUTION LINES—Adams Rural Electric Co-operative, West Union, 175 mi. rural distr. lines and sys. imprvs., Adams Co. $780,000.

Pa., Phila.—TELEVISION STATION—Lou Poller, Chester, television station, $446,000. Russell P. May, 1422 F St. N.W., Wash., D. C., consult. engr.

▲ **Pa., Pittsburgh**—TELEVISION STATION— WCAE, Inc., Carlton House, 550 Grant St., television station, $1,500,000. A. Earl Cullum, 4710 Lemmon Ave., Dallas, Tex., consult. engr.

▲ **Tenn., Dyer**—GAS SYSTEM—Gibson County Utilities Dist., City Hall, natural gas system. $1,800,000. Barnard & Burk, 1023 Nicholsen Dr., Baton Rouge, La., consult. engrs.

West Virginia—GAS TRANSMISSION LINE—Cumberland & Allegheny Gas Co., Elkins, 17 mi. 12 in. gas transmission line between Keyser and Cumberland. $613,000.

▲ **Ont., Fort Erie**—RACE TRACK—Ontario Jockey Club Ltd., 25 King St. W., Toronto, plans by Earle C. Morgan, 906 Yonge St., Toronto, imprv. Fort Erie Race Track, two H barns for 200 horses and 40 stable hands, parking area, paddock, restaurant and barns. $1,000,000. CD 11/17.

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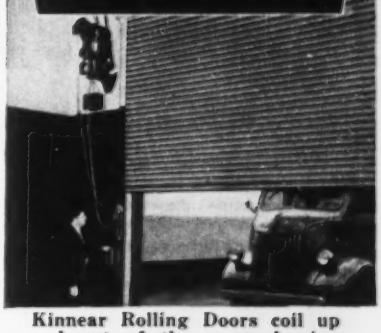

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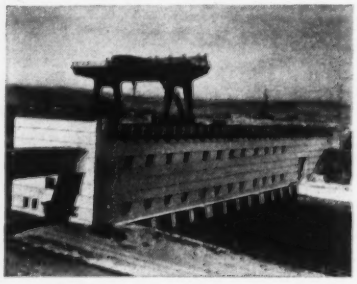
PANEL DISCUSSION

Plywood Concrete Forms Speed Work On Rush Job

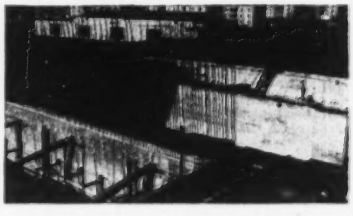


Plywood concrete form panels were credited with helping speed formwork time by up to 20 per cent in building the new Tracy Pumping Plant which furnishes the heartbeat of the giant California Central Valley irrigation project.

According to Fred L. Weiss, construction engineer on the job for Stolte Co., contractor responsible for all concrete work, speed was particularly important on the job because of a penalty clause in the contract. He credits plywood with speeding form construction and application time and costs by 15 to 20 per cent.

Interior PlyForm was specified by Bureau of Reclamation engineers for form work on the plant. Built-up plywood form sections, 20 to 40 feet long, were re-used an average of five times on the walls. Interior PlyForm was also used to form floor slabs as well as water inlet channels beneath the plant.

Plywood Ideal Form Material Reports Highway Builder



A typical use of plywood forms in highway projects is the six-lane Stanley Drive highway underpass in Northern California—built jointly by M and K Corporation and Eaton and Smith. The builders used ⅝" Interior PlyForm for all exposed surfaces for this half million dollar project.

"We wouldn't use anything but plywood for a job like that", says M and K Corporation President B. F. Modglin. "As far as we are concerned it is the ideal form material. It forms clean, smooth concrete, saves time and labor, and re-use cuts costs considerably."

Forms 16-feet high, 2½-feet wide at the bottom and 4-feet, 7 inches wide at the top were used for the ends of the bridge piers. Plywood was nailed across 2x4 and 4x4 studs, 12" o.c., backed by double 2x4 and 4x4 walers. Panel's for road slab were placed across 2x12 joists.

(ADVERTISEMENT)

Standard Tie-Hole Spacing Gives Extra Re-Uses

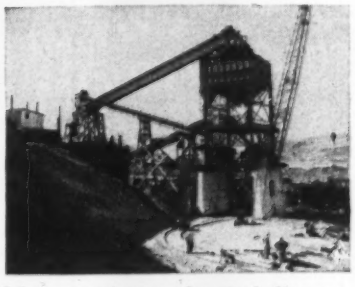
Careful planning of tie-hole spacing and use of varying-size plywood form sections is paying off in extra re-uses on the Clover Park School job in Tacoma, Wash. On the job, 8′-long Exterior plywood form sections were pre-built in 3′, 4′ and 5′-heights to form concrete walls of the school which range in height from 2′ to over 16′. Necessity of drilling new tie-holes for each pour was eliminated by pre-drilling holes so that placement of tie-rods is standardized. Holes were made by stacking plywood and drilling with a template positioning guide.

The idea was developed by Roy Hartman, partner, Standard Construction Company, Tacoma. He reports that by eliminating drilling and form re-construction as the job progressed they were able to get better than 25 re-uses—and the plywood will give additional uses on subsequent jobs.

Plywood Girder Built For Half The Cost Of Steel Truss

Once believed suitable for spans up to only about 60 feet, plywood girders considerably longer are now being used successfully. One of the longest plywood girders currently in use is at the Chief Joseph dam powerhouse in Western Washington. The plywood girder on this job is used to support conveyor belts which carry aggregate to blending bins. It is 120 feet long, with a 90-foot center span and cantilevered ends.

According to Murray Johnson, plant design engineer for Columbia River Constructors, an affiliate of Morrison-Knudson Co., Inc., plywood girders not only cost less than steel trusses, but are far easier to handle and hoist into position.



Johnson estimates that including material and labor, the plywood girder cost only about half as much as a steel truss for the same job. They can be easily salvaged for re-use simply by cutting them in half for hauling and splicing as needed.

The girder on the Chief Joseph job is on the upper run of an incline going up to the hopper. It consists of two I-beams spaced 3′ 3″ apart. It carries a 30″ wide rubber belt on the top flange, together with steel rollers shaped to form a trough to hold the gravel. Exterior plywood, 1″ thick, forms the 4′ web of the girder, with 2x6s bolted and glued on either side of the plywood to form the flanges. Plywood splice plates on both sides do double duty as web stiffeners.

Cast Smoother Concrete With Plywood Forms

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And remember: new overlay panels of Douglas fir plywood now mean even smoother concrete surfaces—plus maximum re-use. See grade data below. For further information, write Douglas Fir Plywood Association, Tacoma 2, Washington.

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Sewer tunnel and hydraulic chambers, Cincinnati

The Mill Creek outfall and diversion sewer contract was awarded to the low bidder at $1,863,965 by the Cincinnati Department of Public Works, R. G. Sarvis, director. T. J. Montgomery is the Cincinnati city engineer. Foley Construction Co. placed the lower of two bids although it exceeded the engineer's estimate by 23%. J. McHugh & S. A. Healy is the other bidder.

Instaliations include: 3,280 ft of 10-ft diameter monolithic concrete sewer at an average depth of 50 ft; 900 ft of 36-in. diameter concrete sewer at an average depth of 45 ft; and two concrete chambers, one 34 ft in diameter at a depth of 78 ft and the other 38 by 43 ft at a 60-ft depth. A difficult problem is anticipated at the point where the tunnel passes under the flood control levee, where special precautions must be taken to protect against flooding of the valley by seepage along the tunnel. Rough tunnel will be grouted between liner plates and existing earth to provide a watertight seal.

Work on this project began January 15 and is to be completed by September 7, 1954. Sewer bricklayers are receiving $3.12 per hr; cement finishers, $2.50 per hr; and laborers, $1.82 per hr.

Bidders include:

1C Foley Const. Co.	$1,863,965
2 James McHugh Const. Co. & S. A. HealyCo.	2,388,090
EE T. J. Montgomery, city engineer	1,520,000

Bids: 12-16-53 Items	Unit	Quantity	Unit Prices 1C	2
Stl sheet piling, in river	t	7	$1,000	$500.00
on land	t	20	300.00	220.00
Flood gate chamber	ls	1	275,000	240,000
Junction chamber	ls	1	22,000	15,000
Diversion chamber	ls	1	250,000	296,000
Intrcptng regltr chamber	ls	1	15,000	15,000
Conc piles, cast-in-place	lf	920	8.00	7.00
RC retaining wall	ls	1	45,000	34,000
20" flap valve	ls	1	775.00	500.00
72" backwater gate	ls	1	8,500	4,000
Watertight MH frame & cover & 4" CI vent pipe	ls	1	300.00	500.00
18" pipe sewer encased in concrete	lf	20	17.00	20.00
36" dia concrete sewer	lf	920	105.00	150.00
36" dia RC sewer on piles	lf	60	40.00	40.00
Conc channel in existing interceptor	cy	1,210	35.00	25.00
10'-0" dia RC sewer	lf	1,860	275.00	460.00
10'-0" dia ext str RC sewer	lf	1,100	370.00	525.00
Spec 11'-6" x 8'-0" RC sewer with diffuser openings	lf	110	360.00	450.00
without diffuser openings	lf	170	390.00	400.00
St MH, on 10'-0" sewer	ea	1	13,500	6,500
St MH, on 36" sewer	ea	1	2,000	3,000
Drop manhole	ls	1	3,200	2,000
Special MH at sta 2-84	ls	1	7,200	7,000
Brick masonry	cy	10	60.00	75.00
Gravel refill	cy	100	4.00	5.00
Wood sheet & bracing ordered left in place	mbm	100	2.00	50.00
Steel sheet & bracing ordered left in place	t	20	150.00	120.00
Rip-rap	cy	180	75.00	20.00
Concrete masonry, 1:6	cy	100	40.00	50.00
Concrete masonry, 1:9	cy	160	25.00	25.00
Additional portland cement	bbl	100	5.00	4.00
Additional reinforcing stl	t	5	300.00	250.00
Alignment holes	lf	320	12.00	10.00
Additional excavation	cy	100	10.00	15.00
Temp bulkhead in flood gate chamber	ls	1	2,500	1,000

Dike and drainage structures, Minnesota

Two contracts were awarded for the Chaska dike and drainage and lift structures by the city of Chaska, Minnesota. Toltz, King and Day, St. Paul, Minnesota are the engineers. Part I, which consists of grading and placing the embankment in the dike and miscellaneous drainage structures, went to John Lano Const. Co., Chaska, the lowest of twelve bidders. Part II, including two surface drainage lift stations, a sanitary sewage pumping station and two diversion manholes, was awarded to Carl Bolander and Sons, Minneapolis, the second low in nine bidders, after the city failed to come to an agreement with the low bidder on completion time.

The dike is to be one mile long with heights varying up to 18 ft and an average height of 11 ft. The slope on the river side is 2½:1 and on the dry side 2:1. There will be one 5,700 gpm pump in each surface drainage lift and enough space for another. These pumps are driven by 50 hp motors. In the sanitary sewage pumping station, there is one 400 and one 2,150 gpm pump.

Carpenters are receiving $2.55 per hr; plasterers, $2.90 per hr; and common laborers, $1.82 per hr. Work on both contracts began in December, with part I scheduled for completion by November 1, 1953 and part II by September 1, 1953.

Bidders include:

Part I

1C John Lano Const. Co., Chaska, Minn.	$89,444
2 H & R Const. Co., Minneapolis, Minn.	100,850
12 Clement F. Scullen, Minneapolis, Minn.	145,950
EE Toltz, King and Day, Inc., Saint Paul, Minn.	85,259

Bids: 12-8-52 Items	Unit	Quantity	Unit Prices 1	2
Clearing & grubbing	ls	1	$250.00	$1,000
Common excavation	cy	12,000	0.30	0.40
Dike embankment	cy	98,000	0.65	0.70
F & I 18" CM culvert pipe	lf	120	3.00	5.50
15" RC culvert pipe	lf	54	2.50	4.80
18" RC culvert pipe	lf	85	4.00	6.30
24" RC culvert pipe	lf	75	6.00	8.70
36" RC culvert pipe	lf	178	10.00	16.60
F & I 18" headwall & gate	ea	2	358.80	550.00
24" headwall & gate	ea	1	424.70	1,200
36" headwall & gate	ea	2	1,264.40	1,750
18" discharge pipe	ea	2	128.00	750.00
10 & 16" forced main discharge pipe	ea	1	315.00	1,785
Manhole extensions	lf	8	25.00	20.00
Watertight MH covers	ea	6	75.00	80.00
Dry rip-rap	sy	1,350	7.00	6.00
Grouted rip-rap	sy	10	25.00	10.00
Remove CM culverts	lf	250	1.00	0.50
F & I metal flume	lf	100	10.62	1.00
Seeding	ac	10.4	100.96	95.00
Replace 8" VC pipe with 8" CI pipe	lf	250	7.50	9.00

Part II

1 Art Bolier, Robbinsdale, Minn.	$48,317
2C Carl Bolander & Sons, Minneapolis, Minn.	51,320
9 Lyane Const. Co., Blooming Prairie, Minn.	65,300
EE Toltz, King & Day, Inc., Saint Paul, Minn.	39,410

Bids: 12-8-52 Items	Unit	Quantity	Unit Prices 1	2
Sanitary sewage pump sta	ls	1	16,817	18,800
Drainage pumping station	ls	2	11,980	12,900
Diversion manholes	ea	2	3,770	3,360

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
BRIDGES
February 3 Massachusetts
STREETS AND ROADS
February 3 Massachusetts

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Jefferson Constr. Co.**, 75 First St., Cambridge, Mass. CA $2,273,000. 248 HOUSING units Proj. PHA 31-1, Mystic Ave., SOMERVILLE, MASS. Somerville Housing Auth., 139 Alewife Brook Parkway, Somerville, Mass. CD 1/6, under LB.

▲ **St. Paul Construction Co.**, (Sponsor) 603 Boylston St., Boston, Mass. Own Forces. $1,500,000. 150 HOUSING Units for Navy Dpt., South Weymouth, WEYMOUTH, MASS. Arthur G. Manaselian, 30 Huntington Ave., Boston, Mass., archt. CD 5/5, under LB.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
BRIDGES
February 19 New Jersey
STREETS AND ROADS
February 11 New York

▲† **Del., Dover**—AVGAS, etc.—B.A. 2/10—U. S. Eng., 121 N. Broad St., Phila., Pa., avgas and lube oil facilities, Dover Air Force Base, No. 36-109-53-366. $1,500,000. Extended date. Jaros Baum Bolles, Penna. R.R. Bldg., Wilmington, engrs. CD 12/2.

BIDS ASKED—BUILDINGS

▲ **Pa., Phila.**—SCHOOLS—B.A. 2/3—Bd. Educ., 21 and Winter Sts., Morris E. Leeds Junior High School, Mt. Pleasant Ave., etc., $2,500,000, Aaron Colish, & Frank E. Hahn, 117 S. 17 St., archts., Dorfman & Bloom, 1411 Walnut St., engrs.; William Dick Elementary School, 25 and Diamond Sts., $1,500,000, Max W. Bieberbach, Jr., 843 N. 19 St., archt. CD 1/4.

▲ **N. Y., Newburgh**—HOUSING—B.A. 2/15—U. S. Eng., 80 Lafayette St., New York, Zone 13, construct, manage, finance 284 housing units, Stewart Air Force Base. $1,000,000-$3,000,000. Plans deposit $60. Extended date. Erwin Gerber, 1180 Raymond Blvd., Newark, N. J., archt. CD 12/11.

▲ **Pa., Phila**—HOUSING—B.A. 3/5—Phila. Housing Auth., 42 S. 15 St., East Poplar Proj., 7 and Green Sts. $2,000,000. Edmond G. Kirmel, John Lane Evans, James Hatfield & Lloyd Malkus Assoc., 1701 Walnut St., archts. CD 11/7.

▲ **N. J., West Trenton**—HANGAR—Bids Asked—Chase Aircraft Co., Inc., De Cou Ave., Trenton, hangar. $1,867,850. Louis S. Kaplan, 25 N. Montgomery Walnut St., archts. CD 11/7.

SOON LETS CONTRACT—BUILDINGS

▲ **Pa., Pottstown**—HOSPITAL—Pottstown Hospital, 724 N. Charlotte St., soon lets contract hospital and nurses home addn. $2,040,252. Vincent G. Kling, 917 Corinthian Ave., Phila., archt. Stevens Bruder, Lewis Tower Bldg., Phila., engr. CD 1/5.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Ferber Co.**, 16 Johnson Ave., Hackensack, N. J., LB, $1,180,653, warehouse, McGuire Air Force Base, No. 46-109-53-263, WRIGHTSTOWN, N. J. U. S. Eng., 121 N. Broad St., Phila., Pa. Bids Jan. 16. CD 11/26.

▲ **MARYLAND**—State Rds. Comn., 108 E. Lexington St., Baltimore,
American Bridge Div. U. S. Steel Co., Federal Land Bank Bldg., Baltimore 18, Md. LB $1,323,317. constr. deck steel plate girder bridge superstructure over Potomac River, 20 spans, 2,425 lin. ft., Brunswick, Contr. F 507-4-715, Frederick Co. Bids Jan. 13. CD 1/2.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Carborundum Metals Co.** (sub. Carborundum Co.), Niagara Falls, N. Y. Own Forces. $2,500,000. zirconium processing PLANT, AKRON, N. Y. Rust Process Design Co., 575 6 Ave., Pittsburgh, Pa., engr. CD 8/19.

▲ **Briarcliff Manor Homes**, c/o Henry J. Mager, 250 Main St., White Plains, N. Y., archt., Owner Builds. $1,500,000. 85 HOUSES, on 57-acre tract, southwest corner of Peekskill Parkway, Rte. 9A and Chappaqua Rd., BRIARCLIFF MANOR, N. Y.

▲ **A. A. LaFountain, Inc.**, 159 Beech St., Hackensack, N. J., CA, $2,246,600 N. J. State HOSPITAL bldgs. addnl. facilities, ANCORA, N. J. N. J. Div. Purchases & Property, State House, Trenton N. J. Epple & Seaman, 901 N. Broad St., Newark, N. J., archts. CD 3/27/52.

▲ **B. J. Lucarelli & Co., Inc.**, 22 Orchard St. Jersey City, N. J., LB, $1,864,000 general contract, HOUSING, incl. 268 units, CAMDEN, N. J. Camden Housing Auth., City Hall, Camden, N. J. Bids Jan. 13. CD 1/7.

▲ **20th Century Constr. Co.**, Browning Rd., Collingswood, N. J., Separate Contracts, $1,275,000, RESIDENTIAL DEVELOPMENT, Park and Briarwood Ave., WESTMONT, N. J. Dante J. D'Anastasio, 1815 Federal St., Camden, N. J., archt.

▲ **William T. Doall**, Bangor, Pa., LB $1,663,700. Consolidated HIGH SCHOOL, ALLENTOWN, PA. Parkland School Dist., Troxell's Crossing, R.D. 3, Allentown, Pa., H. F. Everett & Assoc., 512 Hamilton St., Allentown, Pa., archts. Bids Jan. 15.

▲ **Madway Eng. & Constr. Co.**, Wayne, Pa., Separate Contracts. $2,500,000. 170 RESIDENCES, Springfield Twp. Papermill Rd., CHESTNUT HILL (Phila. P.O.), PA. Jack Swerman, 405 Market St., Chester, Pa., archt.

▲ **Anderson Joyce, Inc.**, Milmont Park, Pa., Separate Contracts. $1,350,000. 135 RESIDENCES, Milmont Ave., MILMONT PARK, PA. Charles T. Okie, Devon, Pa., archt.

▲ **Turner Constr. Co.**, 1500 Walnut St., Phila., Pa., CA. $3,000,000. APARTMENT, Wissahickon and Chelten Aves., PHILA., PA. John J. Schroepfer, 404 W. Chelten Ave., Phila., Pa. Antrim & Etter Assoc., 117 S. 17 St., Phila., archts. Dorfman & Bloom, 1411 Walnut St., Phila., Pa., engrs.

▲ **Orleans Constr. Co.**, 100 W. Rockland St., Phila., Pa., Separate Contracts. $350,000. RESIDENTIAL DEVELOPMENT, 2200 block Fuller St.; $5,000,000, 350 RESIDENCES, Frankford Ave., PHILA., PA.

▲ **Madway Eng. & Constr. Co.**, Wayne, Pa., Separate Contracts. $4,125,000. 275 RESIDENCES, Brownsville Rd., TREVOSE, PA. Jack Swerman, 405 Market St., Chester, Pa., archt.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
BRIDGES
February 6 Kentucky
STREETS AND ROADS
February 6 Kentucky February 24 Mississippi

▲ **La., Baton Rouge**—STADIUM—B.A. 2/27—Louisiana State University, Purch. Agt., Baton Rouge, exten.

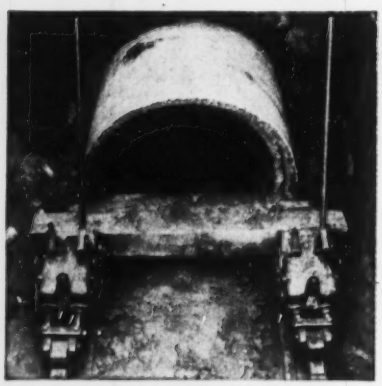
STEAM IN TWO MINUTES from a cold start
with the LITTLEFORD "Kwik-Steam" Vapor-Clarkson Generator
FOR PILE DRIVING
The "Kwik-Steam" Generator is a compact, lightweight, economical unit that will get up steam pressure quickly and can easily be transported around the job, plus a unit that is automatically controlled and yet gives a full capacity of steam instantly.
This Unit will produce steam in two minutes from a cold start and give steam only when steam is needed. No experienced operator is needed on the job hours ahead to get up steam thus saving hours of labor. Burning low-cost fuel oil, the "Kwik-Steam" Generator saves up to 50% on fuel. "Kwik-Steam" Generator meets every need for Pile Driving or Pile Extraction, will operate any make of hammer. Made in sizes from 20 to 165 BHP. Can be had with electric motor or gasoline engine. Write for Pile Driving Bulletin.
LB LITTLEFORD
LITTLEFORD BROS., INC., 415 E. PEARL ST., CINCINNATI 2, OHIO

SAVE HOURS,

CUT COSTS ON YOUR

PIPING JOBS

PUSH PIPE UNDER STREETS, TRACKS, walks, floors and other obstacles with a GREENLEE Hydraulic Pipe Pusher. One-man-operated, portable, simple to operate. No tearing up of pavement . . . eliminates extensive ditching, tunneling, back-filling, tamping, repaving. Cuts job time to a fraction. GREENLEE Hydraulic Pipe Pusher often pays for itself on first job. Two sizes—model shown above for pushing ¾ to 4" pipe. Larger unit, below, for pipe over 4", concrete sewer pipe and large drainage ducts. Power pump also available for extra ease and speed of operation.



GREENLEE

Write today for descriptive literature. Greenlee Tool Co., 2221 Columbia Avenue, Rockford, Illinois, U.S.A.

stadium on campus. $1,500,000. Plans deposit $50. Herbert A. Benson & Assoc., National Bank of Commerce Bldg., New Orleans, archts. CD 8/10/50.

BIDS ASKED—BUILDINGS

▲ **S. C., Charleston**—STORE—B.A. 2/10—Sears Roebuck & Co., 675 Ponce de Leon Ave., retail store and service station, $1,500,000. Armistead & Saggus, Chandler Bldg., Atlanta, Ga., archts. CD 10/3/50.

▲ **N. C., Winston-Salem**—HOUSING—B.A. 2/13—Winston-Salem Housing Auth., Reynolds Bldg., Housing Proj. No. 4, 244 Negro Units. $2,500,000.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **WEST VIRGINIA**—West Virginia Turnpike Comm., 1340 Wilson St., Charleston, Zone 5;
Nello L. Teer Co., Box 1131, Durham, N. C., CA, $2,952,436 grading, draining 3 mi. West Virginia Turnpike from north Portal of Standard Tunnel, connecting Paint Creek and Cabin Creek, Kanawha Co. Bids Dec. 18. CD 11/26.

▲† **Milo J. Choat & Co.**, 1412 W. Fifth St., Tyler, Tex. CA $2,236,834, maintenance hangar bldg., Barksdale Air Force Base, Inv. 53-34, SHREVEPORT, LA. U. S. Eng., 300 Broadway, Little Rock, Ark. Bids Jan. 15. CD 12/22.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Shelby Constr. Co.**, 1106 Canal St., New Orleans, La., CA, $3,835,000, 512 HOUSING Unit, MIAMI, FLA. Miami Housing Auth., 327 N.W. 62 St., Miami, Fla. Bids Jan. 14. CD 1/16.

▲ **J. F., J. G. and R. S. Inman**, 170 Neil St., Memphis, Tenn., Owner Builds. $1,500,000. 156 RESIDENCES, MEMPHIS, TENN. West Livaudais & L. W. Perkins, 2834 Poplar St., Memphis, Tenn., archts.

MIDDLE WEST

BIDS ASKED—BUILDINGS

▲ **O., Columbus**—CIVIC CENTER—B.A. 3/5—Franklin County Veterans Memorial Assn., 280 E. Broad St., brick, steel, concrete faced with limestone. Columbus Civic Center Auditorium, veterans meeting rooms, etc. $3,200,000. Associated Architects, 310 W. Broad St., archts.

▲ **Mich., Saginaw**—HOUSING—B.A. 7/1—Saginaw Housing Comn., Admin. Office, Harold St., 236 low-income housing units, Fuller and Norman Sts. $3,000,000. Plans deposit $10. H. E. Beyster & Assoc., Inc., 2000 Industrial Bank Bldg., Detroit, archts. CD 4/30/52.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **OHIO**—Ohio Turnpike Conn., 361 E. Broad St., Columbus, Zone 15;
Booth & Flinn Co., 1942 Forbes St., Pittsburgh, Pa., LB $2,197,197, four-lane Ohio Turnpike Bridge across Maumee River, Lucas and Wood Counties. Bids Jan. 21. CD 12/31.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **A. L. Jackson Co.**, 161 E. Erie St., Chicago, 11, Ill., CA, $1,500,000, rehabilitation of three floors of 12 story bldg. for occupancy, 108 N. State St., CHICAGO, ILL. Chicago Federal Savings & Loan Assn., 221 N. LaSalle St., Chicago, Ill. Graham Andersen Probst & White, 80 E. Jackson Blvd., Chicago, 4, Ill., archts. Awarded Jan. 14.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **American Bridge Co.**, Frick Bldg., Pittsburgh, Pa. CA $4,990,512. superstructure Paseo Bridge over Missouri River, KANSAS CITY, MO. Jackson and Clay Counties, City of Kansas City, Mo., c/o Reed McKinley, dir. P. Wks. Dpt. City Hall, Kansas City, Mo. Bids Jan. 9, awarded Jan. 15. CD 1/1/9, under LB.

▲† **Robert E. McKee, General Contractor**, P.O. Drawer 562, El Paso, Tex., CA. $1,682,420, est. $1,675,000, airfield pavements, Inv. No. Eng. 29-005-53-66, Biggs Air Force Base, EL PASO, TEX. U. S. Eng., Box 1538, Albuquerque, N. M. Bids Jan. 9.

▲† **J. W. Bateson Constr. Co., Inc.**, 1102 Irwin-Keasler Bldg., Dallas, Tex., CA. $3,733,264, hangar maintenance Serial No. Eng 29-005-53-57, Kirtland Air Force Base, ALBUQUERQUE, N. M. U. S. Eng., Box 1538, Albuquerque, N. M. Bids Jan. 8. CD 1/14, under LB.

▲† **J. W. Bateson Co., Inc.**, 1102 Irwin-Keasler Bldg., Dallas, LB $3,050,126, est. $1,750,000. Lots 1, 2 and 3, hangar-maintenance, Walker Air Force Base, Serial No. Eng 29-005-53-59, ROSWELL, N. M. U. S. Eng., Box 1538, Albuquerque, N. M. Bids Jan. 13.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Murch-Jarvis Co.**, 718 Locust St., St. Louis 1, Mo. CA Est. $1,500,000. 4 story, brick, rein.-con., HOSPITAL, ST. LOUIS, MO. Bethesda General Hospital, 3649 Vista Ave., St. Louis 10, Mo. Hugo K. Graf, 2835 Olive St., St. Louis 3, Mo., archt. CD 12/7/51.

▲ **J. B. Lambert**, Helena, Ark. Owner Builds, $1,500,000 228 RESIDENCES, HELENA, ARK.

▲ **J. Frank Warden Realty Co.**, North Little Rock, Ark., Owner Builds, $1,500,000, 200 RESIDENCES, NORTH LITTLE ROCK, ARK.

▲ **The Lummus Co.**, 385 Madison Ave., New York, N. Y. CA. design and construct, 30,000 bbl. per day REFINERY, incl. storage, admin. bldg., shops, power house, loading facilities, MANDAN, N. D. Standard Oil Co. of Indiana, 910 S. Michigan Ave., Chicago, Ill. CD 1/16.

▲ **E. I. duPont de Nemours & Co.**, Orange, Tex., Own Forces. $4,500,000, unit of chemical production PLANT expansion, ORANGE, TEX. CD 6/18.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

February 10 Washington February 11 California

STREETS AND ROADS

February 13 California

▲ **Calif., San Rafael**—B.A. 3/10—Marin Municipal Water Dist., 874 Fourth St., San Rafael, Big Carson Dam Lagunitas Creek below Alpine Dam $2,000,000. Extended date. CD 12/3.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **P. J. Walker Co.**, 3900 Whiteside Ave., Los Angeles, Calif., CA, $3,806,000, research hangar and laboratory at Edwards Air Force Base, Inv. L-5820, MUROC, CALIF. Langley Aero. Lab. National Advisory Comn. for Aeronautics, Langley Field, Va. Bids Nov. 25, awarded Jan. 14. CD 12/10, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲† **Max J. Kuney Co.**, 120 Ralph St., Spokane 24, Wash., CA, $1,895,026, 2 central HEATING PLANTS and heating systems in permanent troop facilities, Inv. 53-19, FORT LEWIS, WASH. U. S. Eng., 4735 E. Marginal Way, Seattle 4, Wash. Bids Dec. 1. CD 12/5, under LB.

▲ **J. C. Boespflug Constr. Co.**, 1912 4 Ave. S., Seattle, Wash., CA, $1,903,292, general contract, CD 11/7, under LB;
Massart Plumbing & Heating Co., 652 Eliot Ave., W., Seattle, Wash., CA, $642,946, mechanical work, Harborview County HOSPITAL Addn., SEATTLE, WASH. King Co. County-City Bldg., Seattle 4, Wash. Bids Nov. 3, awarded 11/20. CD 11/17, under LB.

▲ **Wm. P. Neil Co. Ltd.**, 4814 Loma Vista St., Los Angeles, Calif., CA. $2,841,470, Imperial Courts Low-Rent HOUSING Project CAL 4-19, incl. 356 units, LOS ANGELES, CALIF. Housing Auth. of City of Los Angeles, 1401 E. First St., Los Angeles, Calif. Bids Nov. 18, awarded Jan. 16. CD 9/18/50.

▲ **Harvey & Rose**, Box 736, Arcadia, Calif., LB, $2,645,000 Aliso Village HOUSING Extension, CA 14-14, LOS ANGELES, CALIF. Housing Auth. of City of Los Angeles, 1401 E. First St., Los Angeles, Calif. Bids Jan. 16. CD 12/22.

CANADA

BIDS ASKED—BUILDINGS

▲ **Que., Sweetsburg**—HOSPITAL—B.A. 2/2—Brome-Missisquoi-Perkins Hospital, Dr. P. E. Roy, chn., T shaped front 157x44 ft., rear wing 65x44 ft., hospital. $2,000,000. E. J. Turcotte, 1487 St. Catherines St. W., Montreal, archt. CD 5/23.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Angus Robertson Ltd.**, 57 Bloor St. W., Toronto, Ont., CA, $8,000,000, 10 story, 2 penthouse floors, bsmt., sub-bsmnt., 175 x 175 ft., rein.-con., steel, stone, brick OFFICE, Bloor St. E. at Jarvis St., TORONTO, ONT. Confederation Life Assn., 12 Richmond St. E., Toronto, Ont. Bids Dec. 23, awarded Jan. 15. CD 11/28.

▲ **Foundation Co. of Canada Ltd.**, 1220 Bay St., Toronto, Ont. CA Est. $3,000,000-$4,000,000. superstructure 5 story, 110x230 ft. with 2 story penthouse, steel ENGINEERING BLDG., Murray & Orde Sts., TORONTO, ONT. Hydro-Electric Power Comn. of Ontario, 620 University Ave., Toronto, Ont. Bids Jan. 6, awarded Jan. 17. CD 11/25.

▲ **L. M. Adler**, 75 Manseau Ave., Montreal, Que. CA $2,500,000. SHOPPING CENTER, Talon St. and Pie IX Blvd., MONTREAL, QUE. M. Cummings & Sons, 1380 W. Sherbrooke St., Montreal, Que. I. S. Backler, 4838 Fulton Ave., Montreal, Que., engr. CD 10/22.

ALASKA

BIDS ASKED—HEAVY CONSTRUCTION

▲† **Alaska**—FAMILY QUARTERS—B.A. 2/16—U. S. Eng., Evergreen Hall, 3013 Arcade Bldg., Seattle 1, Wash., seven 2 story bsmnt., family quarters, ENG 95-507-53-38, Eielson Air Force Base. $1,000,000 Plans deposit $25. CD 11/25.

(Proposal Advertisements see p. 84 to 86)

Home builders see banner year ahead

NAHB sets goal of 1,000,000-plus housing units in 1953; launches nation-wide crusade to rehabilitate blighted areas

By J. R. Carr
Associate Editor

It would be an understatement to say merely that the home builders expect another banner year in 1953. Most of them think it's going to be a terrific year, construction-wise.

Even the most casual observer couldn't help notice the high degree of optimism that prevailed at the National Association of Home Builders' ninth annual convention held last week in Chicago.

Prominent speakers at the five-day meeting—including federal representatives of the housing industry, private builders, mortgage bankers and economists—presented convincing arguments that nothing short of a national catastrophe can slow down home building.

Manufacturers of housing materials and home equipment were equally optimistic.

Over 250 of these companies put on a $3-million display of materials and equipment, in conjunction with the meeting, that included too many innovations to attempt to mention.

• **Air-conditioning boom**—From the usual amount of interest shown in air-conditioning equipment on display, supplemented by results of a recent survey by the NAHB, low-cost air conditioning for the average family should hit the housing market in a big way this year.

Of 255 prominent builders covered by the survey, almost 40% said they will offer air-conditioned homes to the buying public this year. Some manufacturers said they were prepared to mass-produce air-conditioning systems this year in homes selling for $15,000 and under, while others reported they were installing air conditioning in houses selling for as little as $10,000.

• **What's needed**—Less federal restrictions and easier mortgage terms were urged by two spokesmen of NAHB, as a stimulus to home building.

Frank W. Cortright, retiring executive vice-president of the association, declared that low down-payments and small monthly charges are the key to production of a million-plus housing units annually.

Mortgage terms should also be eased, he said, by reducing down-payment requirements for FHA-insured loans and an extension of the amortization period.

Emanuel M. Spiegel, newly elected president of NAHB, told the convention that the association's officers would present a "most aggressive" case against present restrictive controls when Congress begins hearings on them in the next few weeks.

"Federal restrictions on wages, prices, rents, credits and materials are no longer needed to curb inflation," he said, "and they are placing unnecessary obstacles in the way of home ownership for millions of families."

Estimates of the number of new housing starts to be made during 1953 range between a conservative figure of 1,000,000 and an optimistic figure of 1,200,000.

By way of contrast, this time last year, restrictions on materials, high building costs, and direct credit controls, led some forecasters to predict not more than 800,000 starts during 1952.

Despite all of these predictions, however, the home-building industry went ahead and started over 1,100,000 dwelling units last year.

• **The 1953 outlook**—The 1953 outlook for housing was pin-pointed by Alan E. Brockbank, Salt Lake City builder and NAHB's president for the past year.

"Although the postwar demand for 'shelter' housing has been largely filled," he declared, "the public appetite for more and better housing has been sharpened rather than satisfied by the tremendous production of the past seven years.

"Millions of Americans want modern mid-20th Century homes and the industry is now prepared to provide them. With the aid of modern research tools, American builders are planning to combine high production with improvements in the quality of design and materials that will give the home buyer more value than ever before for his housing dollar."

Brockbank also forecast an acceleration in reconditioning and remodeling on the 45,000,000 existing homes in this country.

This work—which will take up much of the slack in the housing demand as a result of the declining rate in new family formation—will be a major source of business for builders until about 1960. By that time, asserted Mr. Brockbank, new family formation will be rising rapidly and make

Boost private housing

The Atomic Energy Commission last week opened the way for possible private ownership of property in government-owned Oak Ridge, Tenn.

Announcing it will lease tracts of land to individuals and private firms, for construction of houses, the commission called its action a "substantial step toward the goal of private ownership in Oak Ridge."

Lots will be leased to individuals on a competitive bid basis. Larger tracts for housing projects will be leased either by competitive bid or negotiated lease.

Oak Ridge has been declared a critical defense area and the HHFA has approved construction of 550 housing units under terms of the National Housing Act. With the commission's decision to lease land for private housing, some of the proposed 550 units may be built within Oak Ridge.

Bond sale set

Proposals on a $20-million bond issue to finance highway and bridge construction in Pennsylvania will be received Feb. 5, according to the governing board of the State Highway and Bridge Authority.

The bond sale will increase to $60 million the amount of State Highway and Bridge Authority obligations contracted since the authority was created in 1949.

The first issue of $15 million was sold in November, 1949, and a second series of $25 million in April, 1951. Average interest rate for the two was 1.46%.

Originally authorized to borrow up to $40 million, the Authority last year received state legislature approval to increase the limit to $80 million. Another $4-million boost is expected to be asked for later this year.

possible the production of 2,000,000 new dwelling units annually.

A more detailed view of the 1953 housing outlook, presented by Ewan Clague, Commissioner, U. S. Bureau of Labor Statistics, strengthened Brockbank's contention that the home-building industry will have a banner year in 1953.

• **The forecasters agree**—Said Clague: "There is more agreement among the forecasters today, relative to the outlook for home building, than at any time during the last seven years. The consensus is that the number of dwelling units started this year will be between 1,000,000 and 1,100,000."

He assured the home builders that most of the economic conditions under which they operate will remain stable throughout 1953. He pointed to the fact that prices of building materials were unusually steady last year, and no factors are now in sight which point up to any important changes during 1953.

For example, lumber prices may even move down a bit more, because of increased competition of other substitute materials.

• **Ample materials and labor**—Clague told the home builders that ample supplies of building materials seem assured for 1953.

In general, he said there will be an adequate supply of both skilled and unskilled labor. Wage rates probably will go up—as is almost invariably the case during periods of full employment—but these increases will not be large enough to affect construction costs significantly.

Moreover, money for financing housing construction should be available as it was last year. Clague based this assumption on the continued high rate of personal saving in the institutions which furnish the bulk of residential mortgage funds.

• **Fewer restrictions**—According to Mr. Clague, housing contractors will be able to operate with fewer impediments this year than they have at any time since 1941. He believes it unlikely that credit controls will be reimposed unless there is some unexpected development, material controls probably will be relaxed further or eliminated completely by mid-year. And, with supply and demand for rental units coming more nearly into balance, rent control will be abandoned in more areas, he said.

As Clague sees the outlook for 1953, it will give home builders an opportunity to achieve better coordination in the purchase and delivery of materials, and will permit better scheduling of the operations of employees and the work of subcontractors. Much less time should be needed in "trouble shooting," leaving more time available to devote to the continued long-term progress and development of the home-building industry. In this category lies the need for modernization of building codes, especially in the substitution of performance codes for material specification codes.

EMANUEL M. SPIEGEL, NAHB president: ". . . An annual production of 1,000,000 new homes is now a minimum supply for this nation."

• **Pro and con**—A not-so-optimistic outlook of the 1953 housing construction picture was expressed by Arthur M. Weimer, Dean, School of Business, University of Indiana. In fact, he predicted that housing construction in 1953 is likely to fall slightly below 1952 levels.

The condition he attributes to a growing market competition; a declining rate of family formation; relatively tight mortgage-market conditions; and storages of improved lots.

Other factors which may affect housing production include the large anticipated expansion in commercial construction, and greater construction goals for public utilities, recreational building, military and naval facilities, and highways.

Miles L. Colean, economist, Washington, D. C., predicted some easing in the money situation for financing housing construction during the coming year.

But, he warned, too ambitious an effort in housing construction during the first few months can run the industry into tight money trouble. Home mortgage borrowers now have, and will continue to have for some time, stiff competition from the revival of commercial building, from expanding industry, and from government.

Summing up the financing outlook, Colean warned the convention that if houses are started now at such a rate as to strain the money supply later on, a disrupted market could result.

Then increased costs, slow sales, and excess inventories could result in a decline in activity during the second half of 1953.

On the other hand, he said, if builders keep their number of starts well in line with sales prospects and loan prospects, they should be able to escape trouble. Moreover, they probably could assure themselves of a good year during 1954.

• **GI financing**—The much-discussed GI financing and construction of housing for veterans was spelled out in detail by T. B. King, Director, Loan Guaranty Service, Veterans Administration.

"We estimate," he said, "that one out of four of the new homes built in this country since the end of World War II have been bought by veterans with the aid of VA-guaranteed loans under the GI Bill. Currently, nearly two-thirds of the GI home loans being made, or about 20,000 per month, are for the purchase of construction of new houses.

"According to our estimates, 20% of the new homes being completed today are being purchased by veterans with GI financing. At that rate, we expect to see about 200,000 new homes sold this year to veterans with VA-guaranteed financing."

King expressed the opinion that the GI loan program was still achieving a good measure of success in helping veterans obtain mortgage financing on liberal terms and at low cost. He emphasized, however, that the outlook for the program's future is not too optimistic.

"In the first place," asserted King, "the supply of private capital available for GI financing is unevenly distributed. Veterans in the Northeast and in large urban centers find it easier to obtain GI 4% financing than veterans in other areas.

"Also, while it is relatively easy for veterans to get GI financing when buying a new house in a large housing development, it is extremely difficult for them to obtain GI 4% financing of construction loans in many areas for building homes on their own lots

—or if they want to purchase used homes."

• **NAHB's 1953 policy**—Significant objectives of NAHB for 1953, contained in a policy statement released near the close of the meeting, stressed the following:

"Public housing has failed dismally to accommodate the lower income groups and to clear slums. This multi-billion program should be reviewed carefully before any further funds are committed or appropriated for it. Faster progress in adequately housing these families could be made at less cost through the use of sound, existing, private housing and, when necessary, by providing rent assistance to such families, under proper local supervision.

Other recommendations in the association's policy include: There is no longer any reason for continuing controls on credit, materials, wages, prices or rent. The FHA maximum mortgage amounts and proportion of loan to value should be adjusted to conform to today's depreciated dollar. Full statutory amortization periods should be permitted for FHA and VA loans, and longer amortization periods should be provided in lower-cost housing. Interest rates should be permitted to rise to reflect actual mortgage market conditions. The Defense Housing and Military Housing titles of the National Housing Act should be continued only to the extent that further need for these emergency measures is conclusively demonstrated.

• **Nation-wide crusade**—The association also went on record urging the rehabilitation of the blighted portion of our housing, and the demolition of that portion that can not be economically restored. To accomplish this goal, the association will undertake a nation-wide crusade for the enactment and enforcement of local and state sanitation and health codes, and for laws to require the demolition of structures which do not meet minimum standards and can't be restored.

The association also urged the creation of a special mortgage finance vehicle adopted to the financing of urban redevelopment projects—both for rent and for sale—and also for financing the rehabilitation of structurally sound, substandard housing.

• **New officers**—In addition to the election of Emanuel M. Spiegel, of New Brunswick, N. J., as president of NAHB, succeeding Alan E. Brockbank of Salt Lake City, other officers for 1953 include: Richard G. Hughes, Pampa, Texas, first vice-president; Nicholas Molnar, Omsted, Ohio, second vice-president; Paul Burkahard, Glendale, Calif., treasurer; and V. O. Stringfellow, Seattle, Wash., secretary.

Finance problem featured at New York AWWA meet

George I. McKelvey, Jr., partner in the Wall Street bond house of Darby & Co., (at the annual meeting of the organization's New York section last week) suggested that the American Water Works Association might use a full-time financial consultant on its staff.

Tracing the growth of revenue-bond financing of waterworks, and pointing out the present high volume of municipal financing, he posed the question of whether such a finance expert profitably could be kept on call for assignment to the association's membership as needed.

The section's Committee on Water Resources reported activity of New York state's controllers commission on the distribution of water: It is sponsoring a legislative amendment this year for a water authority in the state. The amendments expected to be submitted for referendum in November, would ease establishment of joint water supplies and permit sale of water from city to city. And it would empower water authorities to issue revenue or general obligation bonds.

$22-million sewerage project awarded in five sections

Miami, Fla., last week let contracts for more than $22 million for five major portions of an extensive sewerage project (ENR June 12, 1952, p. 51).

Awards went to the low bidders previously listed (ENR Jan. 22, p. 81): Contract No. 1 went to Blythe Bros. Co., of Charlotte, N. C., and W. T. Price Dredging Co., of Miami, Fla., for $6.7 million; Defense Construction Co., of Bridgeport, Conn., got the second section for $2.4 million; Contract No. 3 went to Merritt-Chapman & Scott, of New York City, for just under $2 million; Contract No. 4, the largest, went to Paul Smith Construction Co., of Miami, for $9.2 million. Diamond Construction Co., of Norfolk, Va., received the contract for the fifth section for $1.7 million.

The work includes collectors, force mains, pumping stations, a 47-mgd secondary treatment plant and a sea outfall.

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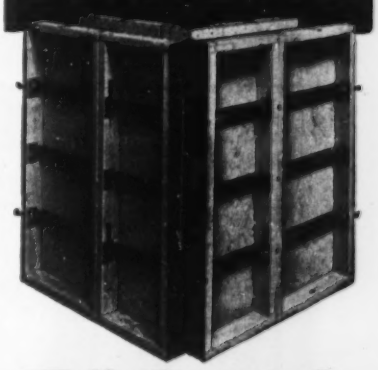

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Workers will buy Cleveland company through profit-sharing trust plan

Complete employee ownership of the $11.8-million Cleveland Pneumatic Tool Co., manufacturers of air-powered hand tools and other construction equipment, has been offered in a plan for acquisition through company-financed profit-sharing trusts. The plan was accepted last week.

Under the unique financial plan, outlined by president Sam B. Mullin, the program permits payment for all of Cleveland Pneumatic's capital stock over a 14-year period by two profit-sharing trusts financed entirely by company contributions and operated for the benefit of the company's 2,700 employees.

Of the total purchase price, $2,150,000 is to be paid at the outset. The balance, including interest, would be spread over the remaining years of the agreement.

According to Mullin, down payments will be made from funds now on hand in two profit-sharing trusts —one for salaried employees and the other for hourly paid workers. Income from future profit sharing, plus expected dividends on stock to be acquired, would be sufficient to meet future payments.

Legally, new stockholders will be the Cleveland Trust Co. as trustee for the profit-sharing trust for hourly paid employees, and officers of Cleveland Pneumatic as trustees for the profit-sharing trust for salaried employees.

Fifty-one percent of stock would be acquired by the salaried employees' trust, known as the 77th Street Trust.

The remaining 49% would go to the trust for hourly paid workers, the Cleveland Pneumatic Tool Co. Profit-Sharing Trust.

Decision on the plan, developed by company officials, came within two weeks from the time of the employer's offer.

Public housing project draws 34 contractors

On the basis of low bids received Jan. 20, a 159-apartment addition to the Donnelly Homes probably will cost the Trenton, N. J., Housing Authority about 13% less than the architects estimated.

Highly competitive bidding—by 34 contractors—was credited with driving the cost of the project down from an estimated $1,570,000 to $1,366,379.

Both Joseph S. Tysowski, executive director of the Trenton Housing Authority, and Albert E. Micklewright, one of the architects, called the Jan. 20 session, "the liveliest bidding on a construction project in the Central New Jersey area in 10 years."

• **Low bidder**—The Gumina Building & Construction Co., of New Brunswick, N. J., was the lowest of six bidders on the general construction contract with a bid of $982,262. Other bids ranged up to $1,147,000.

Seven firms submitted bids on structural steel and ornamental iron work. The Delesen Steel Co., of Englewood, N. J., was low with a bid of $63,900.

On Contract No. 3, covering plumbing, gas fitting and kindred work, Arthur McManus, of East Orange, N. J., was lowest of 10 bidders, with a bid of $133,823.

Philip S. Slack & Co., of Trenton, N. J., was the lowest of seven bidders on heating work, with an offer of $113,689.

Standard Electric Construction Co., of Bayonne, N. J., outbid three other firms on the electrical work. Standard's bid was $72,705.

New office buildings proposed in 4 states

Four states last week were considering construction of new state office buildings.

In Indiana a bill has been introduced in the legislature providing for the creation of a seven-member State Office Building Commission empowered to acquire a site and proceed with construction of a state office building financed with Indiana common school funds.

Meanwhile, Mayor Clark of Indianapolis announced that a bill would be introduced in the State Legislature for the creation of a five-man building authority to construct and administer a city-county building project in Indianapolis.

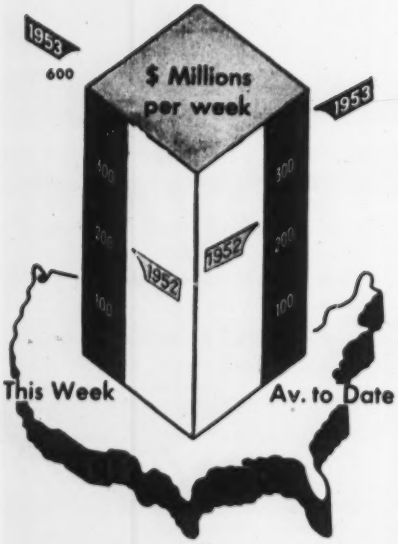
In Pennsylvania, a State Government Survey Committee urged that the state consider buying or constructing office buildings in Philadelphia and Pittsburgh to house all state operations of each city in a single "suitable location."

In California, a bill introduced in the legislature last week called for a public works authority which would be empowered to issue revenue bonds for the construction of a state office building.

And in Wyoming, Governor Rogers, in his message to the legislature, said he favored construction of a new state office building at Casper, but did not recommend specifically an appropriation for the project.

Activity This Week

As reported to ENR (in millions of dollars)



Contracts by type of work

	This Week	Cumulative 5 wks 1953	1952	% chge
Waterworks	$0.5	$19.5	$26.5	−26
Sewerage	24.8	49.2	16.9	+190
Bridges	14.1	54.3	18.4	+195
Highways	13.7	116.4	107.3	+8
Earthwork, waterways	16.3	53.5	46.9	+14
Buildings:				
Public	34.7	212.7	137.5	+55
Housg., pub.	21.0	90.6	73.9	+23
Housg., priv.	324.3	511.0	262.4	+95
Commercial	24.6	83.1	32.2	+158
Industrial	101.3	531.3	337.4	+57
Unclassified	24.6	164.9	137.4	+20
Total	**$599.9**	**$1,886.5**	**$1,196.8**	**+58**

NOTE: Minimum size projects included are: Waterworks and waterway projects, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

ENR indexes		Base Year = 100 1913	1926	1949
Constr. cost	Jan.	587.27	282.30	123.11
	Dec.	587.49	282.41	123.16
Bldg. cost	Jan.	425.04	229.76	120.82
	Dec.	424.92*	229.70*	120.79*
Volume	Dec.	421	171	122

* Revised

Airport financing plan faces legal obstacle

Toledo, Ohio, last week ran into a legal barrier that threatens to block its unique financing plan for a $3.4-million airport (ENR Nov. 13, 1952 p. 149).

Present trouble stems from a $1.7-million bond issue for airports, approved by voters in November, 1951, in anticipation of $1.5 million in federal aid. The city is attempting to build the airport now without federal funds, under a plan proposed by Leigh Fisher, an aviation consultant.

Under the Fisher plan, the city would issue the full $1.7 million in bonds, and the remainder of the construction cost would be borne by local industry and potential airport users.

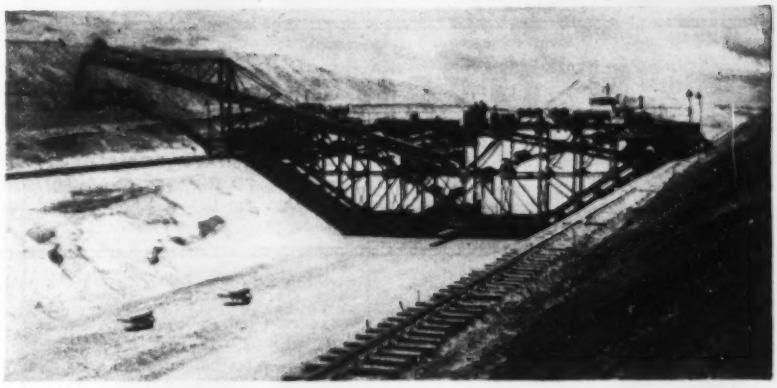
Legal advisers have been reluctant to approve issuance of the bonds, however, because one of the conditions of the referendum—federal aid—is no longer involved.

Local business and civic groups and commercial airlines might be asked to purchase the bonds in question. That would mean that the project could be developed under the Fisher plan without federal aid and without approval of bond counsel.

Pipeline boom continues

The natural gas industry last year spent nearly $1.2 billion for its expansion program, the American Gas Association reported last week. Of that amount, about $1 billion was for construction of new facilities and expansion of existing gas pipeline systems.

To meet continued demand, the AGA said that nearly $1.7 billion will be spent on new construction and plant expansion in 1953.



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Bids: February 24, 1953

Construction of Eleven Piers

Sealed proposals will be received by the West Virginia Turnpike Commission for:
CONTRACT NO. 13

The work to be done under this Contract consists generally of the construction of the eleven piers and two abutments for the Kanawha River Bridge at about Mile 85 along the route of the Turnpike near Reed in Kanawha County, all in connection with the construction of the West Virginia Turnpike in the State of West Virginia.

The principal items of work include:

	Approximate Quantity
Excavation—River Piers	1,320 Cu. Yds.
Excavation—Land Piers	4,600 Cu. Yds.
Treated Timber Piles	19,600 Lin. Ft.
Steel Piles	2,850 Lin. Ft.
Concrete	6,630 Cu. Yds.
Reinforcement Steel	575,000 Lbs.

Proposals will be received at the office of the West Virginia Turnpike Commission, 1340 Wilson Street, Charleston 1, West Virginia, until 9:00 A.M. Eastern Standard Time, and thereafter at the Woman's Club of Charleston, Virginia and Elizabeth Streets, Charleston, West Virginia, until 10:00 A.M. Eastern Standard Time on February 24, 1953, at which time and place the proposals will be publicly opened and read.

Contract documents may be examined by prospective bidders during office hours after January 27, 1953 at the offices of the General Consultants, Howard, Needles, Tammen & Bergendoff, 804 Greenbrier Street, Charleston, West Virginia, and 55 Liberty Street, New York 5, New York.

Contract documents will be furnished for Fifteen Dollars ($15.00) for each set, upon application to Howard, Needles, Tammen & Bergendoff, 804 Greenbrier Street, Charleston, West Virginia (mailing address: P. O. Box 5266, Capitol Station, Charleston, West Virginia). Payment will not be refunded and contract documents are not required to be returned. Checks for plans and specifications shall be drawn payable to Howard, Needles, Tammen & Bergendoff.

Proposals must be made upon the proposal forms furnished by the Commission in the manner designated in the Specifications, and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and the number of the contract on the outside, and must be accompanied by a CASHIER'S or CERTIFIED CHECK OR PROPOSAL BOND in favor of the West Virginia Turnpike Commission FOR NOT LESS THAN FIVE (5) PER CENT OF THE AMOUNT OF THE PROPOSAL, but not less than $500.00 nor more than $200,000.00 and must be delivered at the place designated above on or before the day and hour named. Copies of the proposal form and proposal bond form to be used for submitting proposals, and of the special addressed envelope are furnished in detached form with the contract documents.

The contract will be awarded or the proposals rejected within thirty (30) days from the date of opening proposal. The right is reserved to reject any or all proposals, and to waive any or all formalities.

WEST VIRGINIA
TURNPIKE COMMISSION
D. Holmes Morton, Chairman

January 20, 1953

Bids: February 2, 1953

New Castle Avenue Interchange Lighting

THE DELAWARE MEMORIAL BRIDGE
NOTICE TO BIDDERS
CONTRACT No. 26

Sealed proposals for furnishing and installing New Castle Avenue Interchange Lighting for the Delaware Memorial Bridge will be received by the Delaware State Highway Department at the office of the Director, Delaware Crossing Division, Field Office, Delaware Memorial Bridge, Delaware, until 12 o'clock noon Eastern Standard Time, February 2, 1953, at which time and place said proposals will be opened and read.

The work involves the following principal quantities:

Trenching and Backfilling	7,900 lin. ft.
Underground Metal Conduit	700 lin. ft.
No. 4/0 A.W.G. Lighting Conductor	2,600 lin. ft.
No. 4 A.W.G. Lighting Conductor	15,500 lin. ft.
Light Standards	46

Work on Contract No. 26 shall begin promptly after the execution of the Contract and shall be completed on or before July 1, 1953.

Monthly payment will be made for ninety (90) per cent of the construction completed each month.

Bidders must submit proposals upon forms provided by the Department.

Each proposal must be accompanied by an acceptable surety bond or certified check to the amount of at least ten (10) per cent of the total amount of the proposal.

The Contract will be awarded or proposals rejected within twenty (20) days from the date of opening proposals. The right is reserved to reject any or all bids.

One set of the contract documents may be obtained from the Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, N. Y. after January 10, 1953, upon payment of $10.00. Contract documents need not be returned to the Engineers and the above payment will not be refunded.

The Plans and Specifications and other contract documents may be examined at the office of the Director, Delaware Crossing Division, and at the office of the Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, N. Y. For information as to the location of the Director's office, inquiry should be made at the Administration Building, Toll Plaza, Delaware Memorial Bridge.

State Highway Department
by: J. H. Tyler, McConnell, Chairman
W. A. McWilliams, Director
Delaware Crossing Division
January 8, 1953

Bids: February 12, 1953

The Relocation of Cooper's Point Branch Pennsylvania-Reading Seashore Lines

1. Sealed proposals will be received by the Pennsylvania-Reading Seashore Lines at the office of J. L. Gressitt, Chief Engineer, Pennsylvania-Reading Seashore Lines, Room 1658, Broad Street Station Building, 16th and Pennsylvania Boulevard, Philadelphia 3, Pennsylvania, on February 12, 1953 at 2:00 P.M. E.S.T., at which time and place proposals will be publicly opened and read for the Relocation of Cooper's Point Branch Pennsylvania-Reading Seashore Lines, Eliminating 14 Grade Crossings, City of Camden, New Jersey.

2. The work consists of removal of track, rehabilitation of old track and construction of new track in yards and paved streets, street and sidewalk paving; reinforcing existing sewers, etc. The principal items of construction include approximately:—

15,000	s.y.	of pavement removed
16,000	s.y.	of pavement installed
20,000	c.y.	of excavation for tracks and structures
2,000	l.f.	reinforced concrete protection for sewer
33,000	l.f.	track removed
24,000	l.f.	track installed in yards (labor only)
4,200	l.f.	track installed in streets (labor only)
66		track connections installed (labor only)
8,400	l.f.	timber bearing piles
1,120	l.f.	concrete bearing piles
3		railroad yard buildings constructed
1		coal trestle constructed

Related work including construction of sidewalks, curbs, drainage facilities, installation of floodlights, etc., in the Coopers Point and Pavonia Yards of the railroad, and relocation of existing utilities, and miscellaneous items of work, together with demolition necessary in connection with construction.

3. Copies of the drawings and specifications and blank proposals may be examined at the above office.

4. Copies of the Contract Documents, including the Drawings, Specifications, General Conditions, Proposal and Contract Forms, may be obtained at the above office. A deposit of Twenty-five dollars ($25.00) will be required for each set of Contract Documents taken from the above office, check being made payable to the Pennsylvania-Reading Seashore Lines. Deposits will be refunded in full to each actual bidder upon the return of the Contract Documents in good condition within ten (10) days after opening bids. Subcontractors and those other than actual bidders will be refunded 50% of deposit upon return of the Contract Documents in good condition within ten (10) days after opening bids.

5. Each proposal must be made upon the blanks furnished with the drawings and specifications, and in case of corporations not chartered in New Jersey, must be accompanied by proper certificate that such corporation is authorized to do business in New Jersey.

6. Each proposal must be accompanied by a bidder's bond, cash, certified or cashier's check to the order of the Pennsylvania-Reading Seashore Lines in an amount equal to five percent (5%) of the amount of the bid.

7. The Owner reserves the right to waive any informality in, or to reject, any or all bids.

PENNSYLVANIA-READING
SEASHORE LINES
BY:— J. L. GRESSITT,
CHIEF ENGINEER

DATE: MAY 28, 1952.
REVISED: DECEMBER 1, 1952.

U. S. Government

GOVERNMENT OF THE DISTRICT OF COLUMBIA, DIRECTOR OF HIGHWAYS, D. C., January 29, 1953. SEALED PROPOSALS will be received in Room 429, District Building, 14th and E Streets, N.W., Washington 4, D. C., until 2:00 PM, February 26, 1953, EASTERN STANDARD TIME, and then publicly opened and read for constructing one (1) overpass, four-hundred (400) lineal feet of depressed roadways, retaining walls and a trunk sewer in the vicinity of East Capitol Street and Kenilworth Avenue, N.E., respectively. Approximate quantities of major items in the overpass, the ramps and depressed roadways are: 65,100 cubic yards of excavation, 59,400 lineal feet of treated timber piles, 3,320 cubic yards concrete, 271,000 pounds reinforcing steel and 186,000 pounds structural steel. Approximate quantities in the 15'x10'6" trunk sewer are: 36,000 lineal feet of treated timber piles, 22,000 cubic yards excavation, 4,560 cubic yards concrete, and 604,000 pounds reinforcing steel. Proposal forms, plans and specifications may be obtained from the Secretary, Contract Board, D.C., Room 429, District Building, upon the deposit of a certified check made payable to the Collector of Taxes, D. C., in the amount of Fifty Dollars ($50.00). Telephone NAtional 8-6000, Extension 2307.

OFFICIAL PROPOSALS

Bids: February 11, 1953

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with Federal Aid funds, sealed proposals will be received until ten-thirty o'clock A.M., eastern standard time on the 11th day of February 1953, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
		DISTRICT No. 1				
		G. L. NICKERSON, District Engineer, 333 Broadway, Albany, N. Y.				
Albany & Schenectady	M.T. 53-2 S.T. 53-6 R.C. 53-15	N. Y. State Thruway— Mohawk Sect. Subs. 1 & 2 (Western Ave.-Schenectady Co. Line); Schenectady-Guilderland S.H.577; Schenectady Co. Line-Guilderland S.H.5636; 2 Interchanges; 8 CrossRoads	Acc. 6.242 Thy. 7.616	9" Cem. Conc. Pavt. 2 @ 25' Var. Wide = 11.799 Mi. Asph. Conc. Ty. 1A Opt.= 0.694 Mi. T.C. Graded Grav. (Bit. Mulch) = 1.365 Mi. 6 Gr. Sep. Alpha I-Beams 207.8'; 202'; 209.2'; 200'; 200'; & 200'.	$320,000 Plans $100	$5,825,000
Albany	C 53-6	City of Albany: Washington Ave. Extension	0.39	9" Cem. Conc. Pavt. 2 @ 24' Var. Wide	$11,000 Plans $10	$189,000
Greene	FARC 53-9	Greenville-Coxsackie Pt. 3 S.H.1365 Project S-381(1)	1.08	Asph. Conc. Ty. 1A Opt. R.C. Closed Box Br. 22.6'	$14,000 Plans $10	$250,000
Greene	C.T. 53-1 S.T. 53-1 R.C. 53-5	N. Y. State Thruway— Catskill Section-Subd. 7 (Rte. 23-A-Catskill Creek) Co. Rd. 47; Palenville-Catskill, S.H.8231	Thy. 3.94 Acc. 1.32	9" Cem. Conc. Pavt. 2 @ 25' Var. Wide = 4.35 Mi. Asp. Conc. Ty. 1A Opt.= 0.91 Mi. 2 Gr. Seps. Alpha I-Beam 203' & 208' 2 Brs. Deck Truss 600' and 600' with 121' Alpha I-Beam Appr.	$450,000 Plans $100	$8,344,000
Greene	C.T. 53-2 S.T. 53-5 R.C. 53-12	N. Y. State Thruway— Catskill Section-Subd. 7 (Limestreet-Rte. 9W); Greenville-Coxsackie Pt. 3, S.H.1365; Co. Rd. 9; Co. Rd. 49	Thy. 5.63 Acc. 0.84	9" Cem. Conc. Pavt. 2 @ 25' Wide = 5.63 Mi. Asp. Conc. Ty. 1A, Opt.= 0.84 Mi. Gr. Sep. Rig. Frame 31' Gr. Sep. R.C. Arch 34' Gr. Sep. Alpha I-Beam 263'	$335,000 Plans $50	$6,075,000
		DISTRICT No. 2				
		LACY KETCHUM, District Engineer, 109 No. Genesee St., Utica, New York				
Montgomery	M.T. 53-1 S.T. 53-4 R.C. 53-11	N. Y. State Thruway— Mohawk Section-Subd. 14 (Randall-So. Amsterdam); Fultonville-Amsterdam Pts. 1 & 2, S.H.5656-8313; Fultonville Interchange Co. Rd. 30; Co. Rd. 119; Acc. Rds. A&L Relocation of W.S.R.R. Tracks	Thy. 13.34 Acc. 4.65	9" Cem. Conc. 2 @ 25' Var. Wide = 14.81 Mi. Asp. Conc. Ty. 1A, Opt.= 2.76 Mi. Relocating R.R. Tracks = 0.38 Mi. Misc. Work = 0.04 Mi. 2 Brs. R.C. Closed Boxes 30', 48' 1 Br. Deck Girder 528.7' 5 Gr. Seps. Alpha I-Beams 128.6'; 200.2'; 201', 404', 324'	$670,000 Plans $100	$12,252,000
		DISTRICT No. 3				
		WM. ROBINSON, District Engineer, Weigh Lock Building, Syracuse, New York				
Onondaga	O.T. 53-4	N. Y. State Thruway— Ontario Section Subd. 7 & 8A (Rte. 48 and Rte. 57 Interchanges)	4.64	9" Cem. Conc. Pavt. (Ramps) 12'-30' Wide Gr. Sep. Alpha I-Beam 198' Gr. Sep. Alpha I-Beam 198'	$60,000 Plans $25	$1,017,000
		DISTRICT No. 4				
		ELMER G. H. YOUNGMANN, District Engineer, Barge Canal Terminal, Rochester, New York				
Monroe	LOSP 53-2	Lake Ontario State Parkway Sect. B	.....	Protection Stone Groins at Cowsucker Creek	$1,000 Plans $10	$18,000
		DISTRICT No. 10				
		J. J. DARCY, District Engineer, Montauk Highway at Little East Neck Rd., Babylon, Long Island, New York				
Bronx	FAMDE 53-2	Major Deegan Expressway Contract No. 10 Project U-1082(13)	0.66	Grading & Misc. Wk. Gr. Sep. Alpha I-Beam 98.5'	$150,000 Plans $50	$2,742,000
Nassau	FARC 53-10	Hillside Avenue Pt. 1 S.H. 1948 Project U-1002(2)	2.52	Asp. Conc. Ty. 1A, Opt.	$48,000 Plans $10	$874,000

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders."

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
SUPT. OF PUBLIC WORKS

U. S. Government

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION. NOTICE IS HEREBY GIVEN that sealed bids on Specifications No. 703C-294 for furnishing labor and materials and performing all work for earth-work, lateral lining, and structures, Lateral 256 extension and wasteway; and earthwork and structures, Laterals 256-55R and 256-74L, Kendrick Project, Wyoming, will be mailed to P. O. Box 280, Casper, Wyoming or delivered to the office of the Bureau of Reclamation in time for the public opening at 10:30 a.m., Mountain Standard Time, February 12, 1953, at the office of the Bureau of Reclamation, Reclamation Center, Casper, Wyoming.

Copies of the standard forms and of the specifications may be obtained from the following offices of the Bureau of Reclamation: Avery A. Batson, Regional Director, Building No. 46, Denver Federal Center, Denver, Colorado; and I. J. Matthews, District Manager, Box 280, Casper, Wyoming. The specifications will consist of 2 volumes, "Special Provisions" and "Standard Specifications for Construction of Canal Systems, August 1951." No charge will be made for copies of the Standard Specifications or for copies of the Special Provisions furnished for bidding purposes; for others the charge will be $0.30 per copy for the Standard Specifications and $1.50 per copy for the Special Provisions, not returnable. Payments should be made by check or money order payable to the Treasurer of the United States.

OFFICIAL PROPOSALS

Bids: February 24, 1953

Performing Required Grading & Drainage of W. Virginia Turnpike

Sealed proposals will be received by the West Virginia Turnpike Commission for:

CONTRACT NOS. 23, 23A, 23B

The work to be done under Contract 23 consists in performing the required grading and drainage for approximately 11 miles of the West Virginia Turnpike including the substructures for bridges and a box culvert. This work is located between the overpass at Route 40, mile 25, and Little Whitestick Creek, mile 36, Raleigh County, West Virginia, and is in connection with the construction of the West Virginia Turnpike in the State of West Virginia.

The work to be done under Contract 23A consists in performing the required grading and drainage for approximately 6.7 miles of the West Virginia Turnpike including the substructures for underpasses and a box culvert. This work is located between the overpass at Route 40, mile 25, and Piney Creek, mile 32, Raleigh County, West Virginia, and is in connection with the construction of the West Virginia Turnpike in the State of West Virginia.

The work to be done under Contract 23B consists in performing the required grading and drainage for approximately 4.3 miles of the West Virginia Turnpike including the substructures for bridges. This work is located between Piney Creek, mile 32, and Little Whitestick Creek, mile 36, Raleigh County, West Virginia, and is in connection with the construction of the West Virginia Turnpike in the State of West Virginia.

The Principal Items of work include:

	Approximate Quantity 23A	23B
Clearing and Grubbing	106 acres	86 acres
Excavation (all types)	1,721,000 c.y.	1,132,000 c.y.
Embankment	1,563,000 c.y.	1,093,000 c.y.
Concrete	2,030 c.y.	4,850 c.y.
Reinf. Steel	211,600 lbs.	360,800 lbs.
Culvert Pipes and under drains	16,000 l.f.	11,000 l.f.
Steel Piles		576 l.f.

Contract 23 consists of the combined approximate quantities of Contracts 23A and 23B.

Proposals will be received at the office of the West Virginia Turnpike Commission, 1340 Wilson Street, Charleston 5, West Virginia until 9:00 A.M. Eastern Standard Time, and thereafter at the Woman's Club of Charleston, Virginia and Elizabeth Streets, Charleston, West Virginia until 10:00 A.M. Eastern Standard Time, on February 24, 1953, at which time and place said proposals will be publicly opened and read.

Contract documents may be seen and may be inspected by prospective bidders during office hours, after January 27, 1953, at the office of Howard, Needles, Tammen & Bergendoff, 804 Greenbrier Street, Charleston, West Virginia, and at the offices of the Engineers, Fay, Spofford & Thorndike, 11 Beacon Street, Boston 8, Mass., and 305 Reservoir Road, Beckley, West Virginia.

Contract plans and specifications will be furnished for Thirty-Five Dollars ($35.00) for each complete set, which is not refundable, upon application to Howard, Needles, Tammen & Bergendoff, 804 Greenbrier Street, Charleston, West Virginia. Cross Sections are bound separately, and will be furnished for Ninety Dollars ($90.00) for each complete set, which is not refundable. Partial sets can be furnished at cost upon application. Make checks payable to Howard, Needles, Tammen & Bergendoff.

Proposals must be made upon the proposal forms furnished by the Commission in the manner designated in the Specifications, and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and the number of the contract on the outside, and must be accompanied by a CASHIER'S or CERTIFIED CHECK or PROPOSAL BOND in favor of the West Virginia Turnpike Commission FOR NOT LESS THAN FIVE (5) PER CENT OF THE AMOUNT OF THE PROPOSAL, but not less than $500.00 nor more than $200,000.00 and must be delivered at the place designated above on or before the day and hour named. Copies of the proposal form and proposal bond form to be used for submitting proposals, and of the special addressed envelope are furnished in detached form with the contract documents.

The contract will be awarded or the proposals rejected within thirty (30) days from the date of opening proposals. The right is reserved to reject any or all proposals, and to waive any or all formalities.

WEST VIRGINIA
TURNPIKE COMMISSION
D. Holmes Morton, Chairman

January 21, 1953

OFFICIAL PROPOSALS

Bids: February 25, 1953

Construction of Sanitary Sewers

Sealed proposals for furnishing all labor and materials for the construction of approximately 80,680 lineal feet of 8"-10"-12" and 15" Sanitary Sewers, manholes and miscellaneous appurtenances, together with approximately 2,800 lineal feet of 8" diameter cast iron force main, a Sewage Measuring Device and a Sewage Pumping Station to be constructed in West Norriton Township, Montgomery County, Pennsylvania, will be received by the Secretary of the West Norriton Township Municipal Authority at the Township office, 14 Orchard Lane, West Norriton Township, Montgomery County, Pennsylvania, until 12:00 o'clock noon, Eastern Standard Time on Wednesday, February 25, 1953 at which time they will be publicly opened and read aloud.

The work will be divided into three contracts designated as:

CONTRACT NO. 1—consisting of approximately 48,000 lineal feet of 8"-10"-12" and 15" diameter sanitary sewers, manholes, and miscellaneous appurtenances, together with one sewage measuring device.

CONTRACT NO. 2—Consisting of approximately 32,680 lineal feet of 8", 10" and 12" diameter sanitary sewers, manholes and miscellaneous appurtenances, together with approximately 2,800 lineal feet of 8" diameter cast iron force main.

CONTRACT NO. 3—consisting of a Sewage Pumping Station, complete with pumps and appurtenances in accordance with details of plans and specifications.

Information for Bidders, Form of Bid, Specifications and Form of Contract may be examined at the Township Office or at the office of Albright & Friel Inc., Consulting Engineers, 121 South Broad Street, Philadelphia 7, Pennsylvania, and copies thereof may be obtained at either office, upon a deposit of $20.00 for each set of documents for each contract. If the documents are returned in good condition within five days after the opening of bids, the full amount of the deposit for one set of each contract will be returned to each actual bidder and other deposits will be refunded with a deduction of $10.00 for each set of each contract returned to defray the actual cost of reproduction. If the documents are not returned within the time stated, the entire amount of deposit will be forfeited.

A certified check or bid bond drawn to the order of the West Norriton Township Municipal Authority, equal to five per cent of the amount of bid must be submitted with the proposals.

Contractors may submit bids on any or all contracts.

The proposals must be sealed and marked "SEALED PROPOSALS FOR CONSTRUCTION OF SANITARY SEWERS—CONTRACT NO. 1 and/or NO. 2 and/or SEWAGE PUMPING STATION—CONTRACT NO. 3", addressed to the West Norriton Township Municipal Authority, c/o Margaret H. Crouthamel, Secretary.

The Authority reserves the right to reject any and/or all bids.

No bid may be withdrawn within Forty-five (45) days after the actual date of the opening thereof.

Margaret H. Crouthamel, Secretary
Dated: January 29, 1953

Bids: February 10, 1953

Newark Airport

EQUIPMENT STORAGE SHED
CONTRACT NA-140.010

Sealed proposals for the construction of an equipment storage shed north of Building No. 11 at Newark Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, New York, until 2:30 P.M. on Tuesday, February 10, 1953, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1110, and copies will be furnished upon deposit of $10.00 per set. The deposit shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to the Engineer of Materials who will furnish the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than thirty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, January 29, 1953

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3869) will be received at Indianola, Nebraska, until February 17, 1953, for furnishing labor and materials for remodeling and initial construction for Kansas River District headquarters building at McCook, Nebraska, Missouri River Basin Project. Location: McCook, Nebraska. Principal items are: Remodeling existing building and constructing addition—lump sum; constructing warehouse—lump sum; excavation—1,830 cu. yds.; and other work. Completion time 210 days. For particulars, address Bureau of Reclamation, Indianola, Nebraska; or Building 53, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner

GOVERNMENT OF THE DISTRICT OF COLUMBIA, DIRECTOR OF HIGHWAYS, D. C., January 15, 1953. SEALED PROPOSALS will be received in Room 429, District Building, 14th and E Streets, N.W., Washington 4, D. C., until 2:00 P.M., February 11, 1953, EASTERN STANDARD TIME, and then publicly opened and read for constructing two (2) bridges of reinforced concrete of rigid frame type on New York Avenue, N.E., respectively. The bridge over the Pennsylvania Railroad has six spans with an approximate overall length of 334 feet. Approximate quantities of major items are: 21,200 cubic yards excavation, 11,000 cubic yards concrete, 2,095,000 pounds reinforcing steel, 7,500 square feet stone facing, 82,600 pounds steel false-work beams. The bridge over South Dakota Avenue, N.E., has one (1) span 66 feet 11 inches clear. Approximate quantities are: 22,000 cubic yards excavation, 2,142 cubic yards concrete, 253,000 pounds reinforcing steel, 3,300 square feet of stone facing. Alternate proposals will be received for either bridge or both bridges. Proposal forms, plans and specifications may be obtained from the Secretary, Contract Board, D. C., Room 427, District Building, upon the deposit of a certified check made payable to the Collector of Taxes, D. C., in the amount of Twenty Dollars ($20.00). (Telephone National 8-6000, Ext. 2378)

UNITED STATES DEPARTMENT OF THE INTERIOR—BUREAU OF RECLAMATION—NOTICE IS HEREBY GIVEN that sealed bids on Invitation No. 703S-297 for furnishing and delivering 15,000-volt unit substation, power transformer, lightning arresters, and disconnecting switch and fuses for Bridgeport substation, Transmission Division, Nebraska, Missouri River Basin Project, will be mailed to P. O. Box 280, Casper, Wyoming or delivered to the office of the Bureau of Reclamation in time for the public opening at 2:00 p.m., Mountain Standard Time, February 3, 1953, at the office of the Bureau of Reclamation, Reclamation Center, Casper, Wyoming.

Copies of the standard forms and of the invitations may be obtained from the following offices of the Bureau of Reclamation: Avery A. Batson, Regional Director, Building No. 46, Denver Federal Center, Denver, Colorado; and I. J. Matthews, District Manager, P. O. Box 280, Casper, Wyoming. No charge for copies of the invitations furnished for bidding purposes; for all others $0.25 per copy, not returnable. Payments should be made by check or money order payable to the Treasurer of the United States.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Invitation No. DS-3874) will be received at Denver, Colorado, until February 10, 1953, for furnishing 62,000 barrels of Portland cement for Tiber Dam, Lower Marias Unit, Marias Division, Montana, Missouri River Basin Project. For particulars, address Bureau of Reclamation, Building 53, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner

Sealed bids in duplicate for construction (except elevator) of the Biology-Greenhouse Building at Howard University, College Street, N. W., Washington, D. C., will be received until 1:00 P.M. Standard Time, on Feb. 20, 1953, in Room No. G-341B, General Services Building, 19th and F Streets, N. W., Washington, D. C., and then publicly opened in Room No. G-341D. Bid guarantee is required. If the amount of the contract exceeds $2000, U. S. Standard Form No. 23, Construction Contract, will be used and performance and payment bonds will be required. Upon request one set of Prebid Documents and four sets of drawing and specifications will be supplied without charge to each general contractor interested in bidding on the complete project, all of which must be returned. Not more than six additional sets of drawings and specifications may be obtained by general contractors at a charge of $30.00 per set, which will be refunded for each set returned in good condition within 15 days after the bids are opened. Checks offered as payment must be made payable to the order of the Treasurer, U. S. Upon request and in the discretion of the undersigned one set of drawings and specifications will be furnished to builders' exchanges, chambers of commerce and other similar organizations, with the understanding that the set will be retained on their premises and made available for inspection by any interested sub-contractor or material firm. Bidding material may be obtained at Room No. 1304 General Services Building, 19th and F Streets, N. W., Washington 25, D. C., Phone Executive 4900, Extension 2397. W. E. Reynolds, Commissioner of Public Buildings Service, General Services Administration.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3871) will be received at Coachella, California, until 10 a.m. February 19, 1953, for furnishing labor and materials for earthwork, pipe lines, and structures, Laterals 116.1 and 118.0 and Sublaterals, Unit 8, Coachella Valley Distribution System, Boulder Canyon Project. Location: Near Indio, California. Principal items are: 47,000 cu. yards of excavation for pipe trenches, structures, and reservoir; furnishing and laying 12 to 48 inch diameter precast concrete pipe for approximately 9 miles of closed-conduit distribution lines; furnishing and installing steel pipe for pump discharge lines; and other work. Completion time 300 days. For particulars, address Bureau of Reclamation, Coachella, California; or Building 53, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner

BIDS FOR LEVEE WORK—Memphis District, Corps of Engineers, U. S. Army, P. O. Box 97, Memphis 1, Tenn. Sealed bids will be received at this office until 11:00 a.m., C.S.T., 5 February 1953, and then publicly opened, for approximately 27,500,000 cubic yards channel excavation and embankment along the St. Francis River in St. Francis and Lee Counties, Arkansas. $25.00 deposit required on plans. Information on request.

SEALED PROPOSALS FOR THE PURCHASE OF 1854 TONS FERROUS SCRAP OFFERED FOR SALE BY PANAMA CANAL COMPANY UNDER INVITATION 15 (previously called Circular 14) will be received at Panama Canal Company, 24 State St., New York 4, N. Y. and at Office of Superintendent of Storehouses, Balboa, Canal Zone until 10:30 A.M. EST February 26, 1953. Blanks and information available at 24 State St., New York 4, N. Y.

Department of Commerce, Bureau of Public Roads, January 15, 1953. SEALED BIDS will be received at the office of the Division Engineer, Bureau of Public Roads, 1440 Columbia Pike, Arlington, Virginia, until 11:00 a.m., E.S.T., FEBRUARY 11, 1953, for Project 1A7, Baltimore-Washington Parkway, Prince Georges County, Maryland. Reinforced concrete bridge with stone facing to carry southbound Kenilworth Avenue over northbound Parkway Road. The approximate quantities of the more important items are: 1,700 cu. yd. Excavation for Structures, 2,520 cu. yd. Cement Concrete, 390,000 lb. Reinforcing Steel, 18,000 lb. Structural Steel, 175 cu. yd. Stone Masonry, and 15,000 lin. ft. Treated Timber Piling. Minimum wage rates have been fixed as required by law. Plans, specifications, and proposal forms are available upon request at the address given above. H. J. Spelman, Division Engineer.

Read the Official Proposal Columns of ENGINEERING NEWS-RECORD This Week and Every Week

CLASSIFIED SEARCHLIGHT SECTION ADVERTISING

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

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$1.50 cents a line, minimum 3 lines. To figure advance payment count 5 average words as a line.
POSITION WANTED & INDIVIDUAL SELLING OPPORTUNITY undisplayed advertising rate is one-half of above rate, payable in advance.
PROPOSALS, $1.50 a line an insertion.

INFORMATION:
BOX NUMBERS count as 1 line additional in undisplayed ads.
DISCOUNT OF 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).
EQUIPMENT WANTED or FOR SALE Advertisements acceptable only in Displayed Style.

DISPLAYED—RATE PER INCH:
The advertising rate is $17.10 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.
AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches —to a page. E.N.R.

NEW ADVERTISEMENTS: Address New York City Office, 330 W. 42nd St., N. Y. 36, for February 12th issue closing January 30th.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

BUILDING CONSTRUCTION—Take Off Man. Must know plans thoroughly. Experience with General Contractors figuring public work preferred. Good pay for right man. Write full details. Location—Washington, D. C. P-6585, Engineering News-Record.

CONSTRUCTION ESTIMATOR, experienced in quantity takeoff and preparation of competitive bids for engineering construction. Must be familiar with port improvements, bridge foundations, pile driving, piers, warehouses and similar work. State education, experience, qualifications and salary required. Permanent position with long established Contracting Engineers. P-6646, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT, with $5000. to $10,000. in cash (but not essential) to invest on Profit-Sharing Basis in expanding General Construction Company located in Central New York State. Must be aggressive, experienced organizer—cost conscious, able to read blueprints and do some estimating. Give full information regarding education, training, experience, age, salary expected and references. All replies will be considered strictly confidential. P-6685, Engineering News-Record.

ENGINEERS — MECHANICAL, Electrical, Architectural Degree required. Experienced in commercial and industrial building construction with background in building layout and design. Desire estimating and specification background. Regular full time opening. Many Employee Benefits including free pass transportation self and family. Apply Trans World Airlines, Employment Manager, 10 Richards Road, Kansas City, Missouri.

GRADUATE ENGINEERS experienced in design of reinforced concrete and steel for industrial type buildings with mid-western architectural and engineering office. State full particulars as to age, education, nationality, past experience and salary expected. Enclose recent photograph. P-6557, Engineering News-Record.

ESTIMATOR WANTED: Well known West Coast Engineering and Construction firm is expanding activities and has top position for an Estimator with supervisory ability. Must be thoroughly qualified in all phases of estimating including costs, materials and manpower for widely varied engineering, construction and maintenance programs, domestic and foreign. Send complete experience resume. P-6492, Engineering News-Record.

ESTIMATOR — EXPERIENCED in complete quantity take off in General Contracting business. Location in southeastern states. State experience, references and salary expected. P-6449, Engineering News-Record.

GENERAL SUPERINTENDENT to take complete charge of all field activities building construction. Location Northern Ohio. State experience, references, age and salary desired. P-6686, Engineering News-Record.

HIGHWAY ENGINEER experienced in concrete pavement design, construction and maintenance and with working knowledge of soils mechanics. West Central Location. Requires travel over 6 or 7 state area. No selling but must like to meet people and be able to talk in public. Pleasant working conditions. Permanent position for right man. P-6413, Engineering News-Record.

REQUIRED FOR Southwest experienced draftsman for design and detailing wood and steel structures, foundations, reinforced concrete and other allied work. Pleasant working conditions. Pension and insurance benefits. Personal traveling expenses refunded. Apply by letter with full details, age, education, experience, etc., to American Smelting and Refining Company, 1112 Mills Building, El Paso, Texas.

STRUCTURAL STEEL SALES ENGINEER

Exceptional opportunity for a thoroughly experienced structural engineer who can estimate & sell structural steel for all types of buildings, fabricated & erected.

Plant is long established, has large capacity, located in metro N. Y. area. State experience & salary for personal interview at our expense.

SW-6708, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

WANTED
HEAVY CONSTRUCTION ESTIMATOR

Field Background. Pittsburgh Area. Advise Particulars. Write:

JOHN F. CASEY CO.
BOX 1888 PITTSBURGH 30, PA.

POSITIONS VACANT

REGISTERED PROFESSIONAL Engineer, being a graduate, with at least 5 years experience in Materials testing. Prefer more experience in soils & flexible & rigid surfacing. Must be capable of directing work in an orderly manner & approximately 20 technicians. P-6637, Engineering News-Record.

SUPERINTENDENT OF Public Works wanted for Borough of 12,000 population in central New Jersey. Experience necessary in street and drainage maintenance and handling men. State experience and salary expected. P-6568, Engineering News-Record.

WANTED—MANAGER of heavy construction department. This is a challenge to men of real ability. Young, rapidly expanding construction firm in Southeast has opening for high caliber man with ability to organize and supervise heavy construction work, such as large bridges, dams, power plants, etc. Duties include estimating, organizing and complete responsibility for work. Excellent opportunity for right man. Please reply to P-6578, Engineering News-Record.

WANTED COMPLETION Engineer. Must have college level training in Engineering and must have at least ten (10) years experience in the design and construction of all type of buildings. Duties shall include the preparation, editing, and assembly of information for final engineering completion reports. Must be able to coordinate the compiling of data by other prime and sub-contractors in the execution of their completion reports. Steady employment on high priority long term government project. Applicants must be citizens of the United States and be able to pass FBI Security requirements. P-6691, Engineering News- Record.

WANTED—GRADUATE Civil Engineer, some experience in the structural field preferred, by long established engineering promotional and educational organization, to be a representative in the Long Island area. Age 25 to 40. Give resume of education, engineering experience, and salary requirements in reply. P-6678, Engineering News-Record.

WANTED BY nationally known Contractor doing work principally in the Middle Atlantic and Southern States highly qualified and experienced estimator for building construction of all kinds. Give full details of education and experience. P-6645, Engineering News-Record.

DRAFTSMEN

For detailing of Reinforcing Steel, Steel Joists, Windows, etc. Experienced men preferred, but will consider men with limited experience in this or allied fields. Permanent position to qualified applicants. Air-conditioned office. 40-hour week, overtime, hospitalization and group insurance plans, paid vacations. Location Richmond, Virginia.

Reply giving brief resume of experience, education, availability and salary expected.

P-6312, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

POSITIONS VACANT

WANTED: BRIDGE foreman capable of handling all phases of form work, pouring concrete, etc. Salary and bonus; good opportunity; work in Central New York State. Write P-6514, Engineering News-Record.

WANTED: CONCRETE paving foreman capable of taking charge of entire operation including setting up of batch plant, etc. Write P-6515, Engineering News-Record.

SELLING OPPORTUNITY OFFERED

WANTED SALES Engineer with structural experience to call on Architectural and Engineering firms in North Carolina for old established concern. Salary and Commission. State qualifications and experience first letter. Reply to SW-6597, Engineering News-Record.

POSITIONS WANTED

C.E. GRADUATE with 2 years experience in building construction supervision. Some experience in sewer and waterline design and installation. Desires job with contractor engaged in large project. Write PW-6591, Engineering News-Record, Chicago, Illinois.

CONSTRUCTION SUPERINTENDENT, an aggressive experienced organizer, cost conscious, years of practical experience on school, church, commercial, and defense construction in metropolitan New York area. Desire permanent position with progressive contractor in southern Florida. Available in 60 days. PW-6695, Engineering News-Record.

CONSTRUCTION ENGINEER, 40, married, available Mar. 20 after 2 yrs. as const. management engr. on $50 million program with Army Engrs. in Germany. Former contractor. Background of basic structural designing, estimating, supervision, and administration. D. L. Haycock, Post Engineers, APO-178, c/o PM, N. Y.

CONSTRUCTION ENGINEER C.E. Graduate, 25 years experience design, estimating and supervision of construction of housing, commercial buildings, utilities, roads, harbor works, earthwork, heavy construction. 16 years Tropics Fluent Spanish. Foreign or domestic. PW-6603, Engineering News-Record.

(Continued on page 89)

ENGINEERS ARCHITECTS ESTIMATORS

Openings in Cleveland and other various offices offering good salaries with long term employment opportunities for qualified personnel in the following categories

Structural—Engineers and designers experienced in structural steel and reinforced concrete design on industrial and commercial buildings

Piping—Engineers and designers experienced in Process installations

Architectural—Architects and architectural designers experienced in industrial and commercial building design

Estimating—Estimators experienced in industrial and commercial buildings and mechanical installations

Specifications—Specifications writers experienced in writing specifications for industrial and commercial buildings

Costs & Methods—Engineers experienced in costs, methods and planning on industrial building projects

These positions offer excellent working conditions with paid vacations, sick leave and participating group insurance program. Most locations are working scheduled 5 day 45 hour work week with overtime after 40 hours.

Replies will be treated confidential and arrangements will be made to interview selected applicants. Please submit complete resume stating experience, education, salary required and date available to

THE H. K. FERGUSON CO.

ENGINEERS AND BUILDERS

FERGUSON BUILDING CLEVELAND 14, OHIO

WANTED

CONCRETE PRESSURE PIPE SPECIALISTS

Old and well established, financially strong company about to enter concrete pressure pipe field. Chance to get in on ground floor with possibility of future stock ownership.

Desire engineers familiar with water pipe design, mechanical engineers for equipment design and fabrication, men familiar with fabrication of steel cylinders and reinforcing cages, also men with experience and knowledge of prestressing as it pertains to concrete pressure pipe. Also desire superintendents capable of taking complete charge of large projects for pressure and non pressure pipe.

All correspondence will be treated in strictest confidence to avoid embarrassment with present employers.

P-6406, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

ENGINEERS WANTED

The Tennessee Valley Authority wants Civil, Structural, Office Engineers, and Estimators. The work is design and construction of large steam-electric and hydro-electric projects and transmission systems. Salaries start at $4450 and $5325 for 40-hour week. All jobs carry automatic within-grade increases for satisfactory service, liberal vacation leave, sick leave, and retirement benefits. Design and estimating jobs are in Knoxville and Chattanooga, Tennessee. Field and office engineering jobs are at construction sites in the Tennessee Valley area and at Paducah, Kentucky.

Write to

TENNESSEE VALLEY AUTHORITY,
DIVISION OF PERSONNEL,
KNOXVILLE, TENNESSEE

Mechanical-Electrical Engineer

Excellent opportunity for a graduate engineer with construction experience in both electrical and mechanical engineering. Permanent position for qualified applicant.

C. H. WALKER, *Personnel Mgr.*

DUFFY CONSTRUCTION CORPORATION
BOX 111
LOCKLAND 15 OHIO

CHIEF ENGINEER

Heat Exchange
Chemical Process Equipment

Unusual opportunity for engineer experienced in design and manufacture to head engineering department of growing organization. Confidential. Write giving full particulars to

P-6626, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

WANTED

An Alert Mechanical Engineer with Some Knowledge of Electrical Engineering . . . Must Be a Good Calculator . . .

PHILIPS & DAVIES, INC.
KENTON, OHIO

HELP WANTED MALE

STRUCTURAL STEEL DETAILER

Experienced, first-class, must be a civil engineer graduate, permanent position.

P. O. Box 955 New Haven, Connecticut

WANTED

GENERAL PAVING SUPERINTENDENT
CHICAGO AREA

Aggressive, imaginative, fast-moving organizer to handle asphalt resurfacing, concrete roads and storm sewer systems. Excellent opportunity for experienced man. Top salary and bonus.

P-6363, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

WANTED

NATIONAL SALES MANAGER

with bar joist experience in estimating selling setting up agents and distributors to make headquarters in New York City. Extensive travel required (Western States excluded). State salary now earning and expected.

SW-6500, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

ENGINEERS

Structural, mechanical, and electrical for work on hydro-electric power developments. Write giving full experience record and qualifications.

HARZA ENGINEERING COMPANY
400 West Madison Street Chicago, Illinois

Wanted—Equipment Superintendent

Must have complete and thorough mechanical knowledge combined with administrative ability and sober background. Caterpillar experience essential.

Work to consist of field and shop supervision of contractor's equipment located in mid-west. Mail inquiry along with self-description and complete history to

P-6681, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

STRUCTURAL ENGINEERING
ARCHITECTURAL ENGINEERING
OUR COURSES of instruction by mail HAVE HELPED THOUSANDS to better positions and to pass State Board Examinations. *Forty-third year. Write today.*
WILSON Engineering Corp.
College House Offices - HARVARD SQUARE, CAMBRIDGE, MASS.

AVAILABLE

Construction Manager with long successful record in charge of estimating, bidding, and supervision of all types of Heavy Construction Projects—in particular Sewage Disposal and Water Filtration Plants—desires permanent connection. Best of references.

PW-6703, Engineering News-Record
330 West 42 St., New York 36, N. Y.

POSITIONS WANTED

(Continued from page 87)

CONSTRUCTION MANAGER or Project Manager. Available after Mar. 15, 1953. 22 years highway, airfield, and other heavy construction. Graduate Civil Engineer with experience as both Engineer and Constructor at top level. Thorough knowledge of soils, concrete, and asphalt work including design. Have handled construction under most extreme difficulties and have unsurpassed record of performance with earnings exceeding $20,000 per year. Some knowledge of Spanish, French, and Portuguese. State-wide or Foreign. Age 42 years. PW-6553, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT Concrete pipe manufacturer considerable experience. PW-6552, Engineering News-Record.

ENGINEERING MANAGER background in complete Plant Design, preparation and analysis of budgets for industrial installations. Bulk of experience in detergents. Pharmaceuticals and organic chemicals. PW-6457, Engineering News-Record.

ESTIMATOR EXPERIENCED—Age 39—Complete bids prepared for public and industrial building; seeking permanent position. PW-6639, Engineering News-Record.

EXECUTIVE PROJECT Mgr. & Supt. 25 years' broad experience in Eng. const., airports, highways, mining. PW-6663, Engineering News-Record.

ENGINEER-REPRESENTATIVE: Engineering and construction; industrial and public works. Wide experience U.S. and abroad. Contract negotiations, sales, liaison, coordination, management. Available to reputable firms on associate or consulting basis. Address "Engineer", P.O. Box 2822, Washington 13, D. C.

GENERAL CONSTRUCTION Superintendent—26 yrs. experience. Has managed projects up to $50,000,000.00. Desires connection with live wire company, where planning, cost, production and administrative ability is a must. Share the profits and permanent connection preferred. Present contract expiring Feb. 20-53. Excellent references & resume upon request. PW-6632, Engineering News-Record.

PROJECT ENGINEER, young, energetic graduate. Experienced field and office on pulpmills, steam plants, hangars, barracks, airports, docks, railroad and highway construction, surveying. Available for difficult assignment only, at administrative level. PW-6458, Engineering News-Record.

SANITARY ENGINEER with 15 years design experience offers services to consulting engineers with excessive backlog of work. Will undertake complete projects on fixed fee basis. Preparation of final plans and specifications, including structural design, hydraulic features, architectural, electrical, etc. Will visit your office for personal interview without obligation. PW-6638, Engineering News-Record.

PART TIME WORK WANTED

Licensed P.E. in N. Y. Available for part-time or free lance work. Structural design in steel, concrete, timber — industrial, commercial, bridges, roads. PTWW-6671, Engineering News-Record.

WORK WANTED

Field Work and plans on: Electrical transmission, Highway, water and sewer systems. Wilson Engineering Co., Glasgow, Ky.

Registered experienced structural engineer wants work, buildings, special structures, foundations, etc., design, working drawings, specifications quantity surveys, estimated costs. WW-6655, Engineering News-Record.

WANTED

4—90 ft., Bents of Steel False-Work capable of supporting 100 tons each bent. M. E. Weatherford, Inc., Box 2341, Dearborn, Mich.

BUSINESS OPPORTUNITIES

Professional Engineer seeks partnership in small construction company or form partnership with right man. BO-6485, Engineering News-Record.

SUPERINTENDENTS AND PROJECT MANAGERS TRAINING COURSE

All instruction by mail. Send today for sample lesson and complete details

GEO. E. DEATHERAGE & SON
5 E. Preston St. Baltimore 2, Maryland

ATTENTION CONTRACTORS:

List your equipment with us for quick sales. We also store your equipment in our yard for a small fee until sold if you desire.
Consult us for your equipment needs.

FINEST CONSTRUCTION & EQUIPMENT CORP.
147-47 Farmers Blvd., Jamaica 34, N. Y.
Tel. LA 7-3637

MANHOLE FORMS

One set Irvington Sectional Steel Forms for round manholes 4'-0" I.D. x 8" walls, 20'-6" O. A. Height in 1'-10" and 2'-4" lifts. Simplest type for erection and stripping.

Available Now — Perfect Condition.

M. R. McINERNY Corp., Bruckner Blvd. at Eastchester Bay, New York 61, N. Y.

FOR SALE
1000 STEEL
LANDING MATS
10' x 15", 68 lbs. Ea.
STOCK CONST'N CORP.
3721 Grand Cent'l. Term. New York 17
Murray Hill 6-4662

WANTED

WANTED
MOTOR CRANE
with Pneumatic Tires. 40,000 lb. rated capacity 80 ft. Boom, with Jib if available. State Price, Make, Model, Age, Condition, When and Where Available.

W-6693, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

WANTED

20 To 25 Ton Truck Crane To Be Used Principally For Erecting Steel

DANIEL KLOCKNER Jr., INC.
164 Franklin Ave., Rockaway, New Jersey
Phone: Rockaway 9-2340

WANTED

To by or rent

Drive Cap and Flat Anvil Block for McKiernan Terry 10-B-3 Steam Hammer

REV-LYN CONTRACTING CO.
9 Hudson Street Lynn, Mass.

For Sale I Beams (Used)

1—24"	85 lbs.	29'6"
1—24"	120 "	29'6"
1—24"	120 "	30'
2—24"	85 "	34'
1—24"	105 "	34'
10—24"	115 "	34'
1—24"	120 "	34'
1—24"	140 "	34'
6—26"	150 "	33'
4—26"	150 "	34'
3—26"	90 "	34'
2—28"	105 "	31'6"
6—28"	105 "	34'
1—28"	165 "	34'
2—28"	165 "	37'6"
2—28"	180 "	37'6"
3—30"	120 "	29'6"
1—30"	120 "	34'
1—30"	180 "	34'6"
1—30"	200 "	34'

Plate Girders

1—54"	884 "	32'
2—56"	432 "	67'
4—56"	231 "	67'
2—56"	258 "	67'

JERRY QUIRK CO.
824 E. 11 ST. ERIE, PENNA.

EQUIPMENT FOR SALE

PAVING EQUIPMENT

1—Blaw-Knox—400 Bbl. Cement Bin with 1½ yd. twin batcher.
1—Blaw-Know—100 ton Aggregate Bin, 3 compt., 1½ yd. twin batcher.
1—Koehring—16-E Twin batch Paver, on rubber tires.
2000 ft.—8½x8" Metalform Steel Road Forms.
1—Galion—8 to 10 ton Tandem Roller.
1—Barber Green—Model 358—Hopper Car Unloader.
1—Barber Greene—Model 363—35 ft. Portable Conveyor.
All above purchased new in 1952—Used less than 6 months on one job only.

MISCELLANEOUS

1—D-6 Caterpillar Bulldozer.
1—Huber Motor Road Maintainer.
1—Lorain 40 Shovel—¾ yd.
1—Lorain 40 Crane—¾ yd. 65 ft. sectional boom, ¾ yd. backhoe attachment, ¾ yd. Owen Bucket.
2—Garbo—1 yd. Concrete Buckets—bottom dump.

Alport-Carlo Construction Company
706 Chestnut St. St. Louis, Mo.
Phone—Chestnut 9336

TRUCK CRANE

25-Ton BAY CITY Crane Wagon, Model 190-C.W. With 100-Ft. Boom, 15-Ft. Jib

New April, 1952, Used less than 4-mos.

Sale Or Long Term Rental By Owner

FS-6598, Engineering News-Record
520 N. Michigan Ave. Chicago 11, Ill.

R & G
P & H 255A ¾ yd. Shovel
Crawler 1947 Waukesha gas

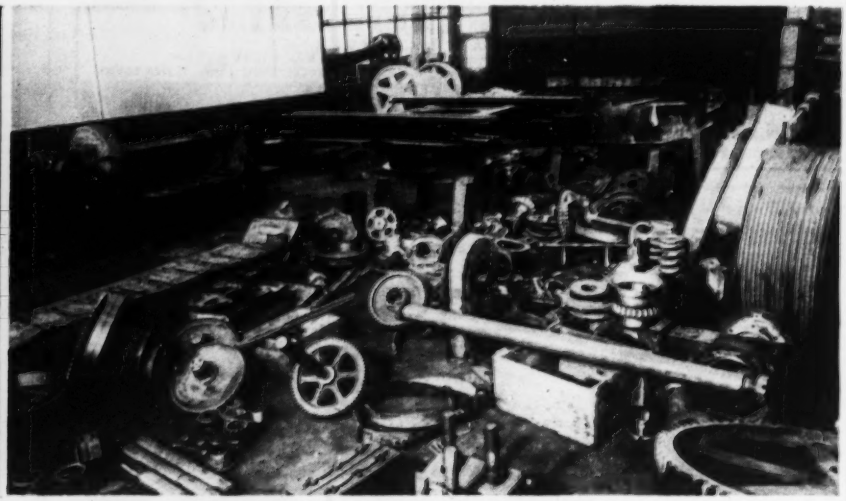
EDWARD EHRBAR, Inc.
29 Meserole Ave. Bklyn 22, N. Y.

FOR SALE
Marion Steam Crane (Crawler)
Model 32 60' Boom, W.N. Best Oil Burner 50 H.P. Boiler

OLE HANSEN & SONS, INC.
Pleasantville, N. J.

BEFORE

L. B. SMITH starts rebuilding used equipment, it is necessary to completely dismantle it as was the case illustrated here. Skilled workers, manning the latest and most modern machines, using standard bushings, standard shafts, standard factory parts, perform our rebuilding jobs with doctor-like thoroughness!



THE REBUILDING JOB WE DID HERE...

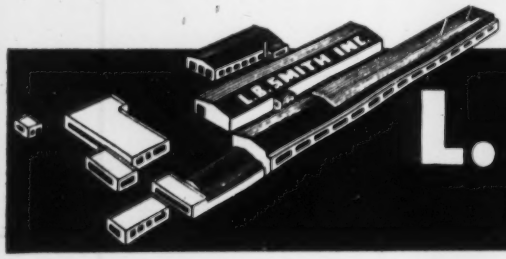
can be done on your equipment, too!!!

AFTER

L. B. SMITH rebuilds equipment, it is ready for many years of further use. Wherever possible, new design is incorporated into the rebuilt machine, increasing the productive capacity. And since under and oversizing shafts, bearings, etc. is frowned upon, no trouble is experienced in future maintenance.

Your Equipment???

Have you equipment we can rebuild? You are invited to use our facilities — the world's largest equipment rebuilding facilities . . . where rebuilding is a business — with over 25 years of experience on all types of construction equipment — where trained mechanics with precision tools — can build back into your equipment many years of additional and efficient usefulness — using the same thoroughness employed in rebuilding our own used equipment. Write today



L. B. SMITH INC.

CAMP HILL, SUBURB OF HARRISBURG, PA.

L. B. SMITH INC.

New and Used Equipment News

Prepared Monthly by Ed Woolford at Camp Hill, Pa.

VOL. 1 NO. 10

AIR COMPRESSORS

Gardner-Denver 500 cu. ft. diesel, new condition.
Gardner-Denver 500 cu. ft. diesel, good operating condition.
Schramm 105 cubic foot gas powered compressor on 4 steel wheels.
Worthington two-stage, water-cooled, vertical 250#, 60 CFM, new condition.
Paving breakers, jackhammers, wagon drills, tie tampers.

QUARRY EQUIPMENT & BINS

2540 Cedarapids AAAA primary unit on rubber, diesel powbr. Rebuilt.
2036 Cedarapids AAA primary unit on rubber, diesel power. Rebuilt.
1036/2418 Cedarapids Jr. Tandem unit on rubber.
Cedarapids Rock-It plant w/2025 jaw, 3033 hammermill. New.
1236 Cedarapids Model 6C plant. New.
4033 Cedarapids Model 6C plant. New.
2020 Cedarapids double impeller. New condition.
4024 Cedarapids roll. Rebuilt.
3018 Cedarapids roll. Rebuilt.
1236 Cedarapids twin jaw crusher. New.
10x7 Allis Chalmers lake type jaw crusher. Rebuilt.
#1 Cedarapids Kubit impact breaker. New condition.
B-3 Jeffrey swing hammer pulverizer. Rebuilt.
36" x 14' apron feeder.
42" x 10' Cedarapids feeder.
4' x 6' Kennedy Van Saun single deck screen.
3' x 6' Kennedy Van Saun triple deck screen.
60" dia. x 14' long Traylor revolving screen. Rebuilt.
36" Wemco single pitch sand screw. New condition.
15 cu. yd. Cedarapids sand drag. New.
16" x 90' bucket elevator.
60-ton, 2-compartment, 8' x 18' storage bin w/clam gates.
100-ton, 2 compartment, 13'x23' storage bin.
Special bins to your specifications.
Conveyors—18"—24"—30"—36". Also belt.

TRUCKS—TRAILERS

27FD Euclid rear dumps.
1½-ton Ford with any body.
2000-gallon tanks on semi-trailer mounting.
New and rebuilt dump bodies.

GENERATORS & LIGHT PLANTS

1½ KW to 125 KW, alternating and direct current gasoline and diesel powered.

SHOVELS—CRANES

Lorain L-82, 2-yard diesel.
Lorain 75, 1¼-yd. diesel.
Lorain 40 truck crane on Mack 3-axle truck.
Lorain TL, ¾-yd. diesel. Any front.
Unit 514, ½-yd. gasoline crawler shovel. Rebuilt.
Osgood 200 ½-yd. gas hoe.

SHOVEL & CRANE ATTACHMENTS

Lorain L-41 Chain Crowd Shovel Attachment. Rebuilt.
Lorain 40 Hi-Lift shovel attachment.
P&H 203 shovel attachment.
Chain crowd Lorain 30A shovel attachment.
Bucyrus-Erie 1½-yd. rock bucket.
McCaffrey Model 648 for 1¼ to 2-yd. crane.
McCaffrey Model 636 for ¾-yd. to 1-yd. crane.

BACKHOE BUCKETS & ATTACHMENTS

Lorain 30 hoe attachment complete.
¾-yd. Lorain, 40, LBS #8105, 44" cutting width.
¾-yd. Amsco 40" cutting width, LBS #8101.

CLAM—DRAG—SCRAPER BUCKETS

LIFTING MAGNETS

1—45" Ohio lifting magnet, rebuilt.

SHOVEL DIPPERS

Lorain 41, ¾-yd. LBS #8600, rebuilt.
New Lima 1-yd. Amsco, LBS #2295.
Bucyrus-Erie 1¼-yd. gas air, LBS #3782, fair.
Lorain 75B, 1½-yd. manganese bucket, LBS #8538.
Lorain 75B, 1¼-yd. extended lip, 1¾-yd. LBS #2260.
Pettibone-Mulliken 2-yd. Lorain 82 or 820, manganese, LBS #5361.
Pettibone-Mulliken 2-yd. for 3500 Manitowoc LBS #5763.
Esco 2½-yd. cast weld dipper with bail & teeth.

CONCRETE EQUIPMENT

Blaw-Knox gas-electric finisher, 10½'-12½', rebuilt.
Koehring 10'-12' finishers, rebuilt.
Cleveland formgrader, new 1944 rebuilt.
Corr formgrader, new 1944, rebuilt.

TRUCK MIXERS

3-yd. Smith high discharge mixer on International chassis.

TRACTORS

TD-24 International with Bucyrus-Erie angle-blade.
TD9 International diesel with 1 yd. Loadover.
Model CR Tournapull w/16-yd. Model E16 Tournarocker, rebuilt.

WELL DRILLS & TOOLS

Sanderson-Cyclone #42 well drill, new.
Sanderson-Cyclone #44 well drill, new.
Bits—Stems—Bailers—Sockets—Etc.

Barber-Greene 44C Trenching machine 18" to 24" cutting width, 7' depth.

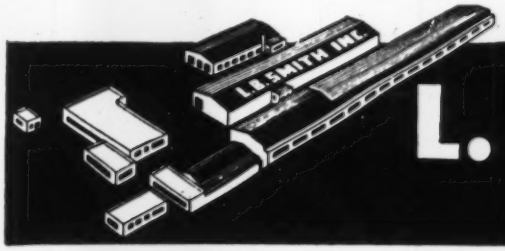
PUMPS

New Layne Bowler type 18 deep well pump with right angle gear drive. 3000 GPM at 120' TDH.
Used and rebuilt pumps, all sizes, gasoline, electric or diesel.

GASOLINE AND DIESEL ENGINES

Caterpillar D-13000, rebuilt.
Murphy ME-6, & ME-46, rebuilt.

***Phone* HARRISBURG, PA. 7-3431**



L. B. SMITH INC.

CAMP HILL, SUBURB OF HARRISBURG, PA.

COMPLETE TUNNEL EQUIPMENT

For Drilling

3—1035 c.f.m. Ingersoll-Rand Stationary Compressors with 200 H.P. Electric Motors, Air Receivers, Aftercoolers and made-up piping.
10—Ingersoll-Rand No. 229 DJB Drill Booms
16—Ingersoll-Rand DA35, wet type Drifters

For Mucking

3—#40 Eimco Rockershovels
4—#75 Conway Muckers

For Hauling
(all 36" gauge)

6—Greensburg, 11 ton, Electric Locomotives
3—Whitcomb, 10 ton, Electric Locomotives
3—40 K.W. Battery Charging Units
2—20 K.W. Battery Charging Units
1—Plymouth, 10 ton, Gas Locomotive
8—5 yard Side Dump Muck Cars
6—2 yard Koppel Dump Cars
30—Flat Cars

For Ventilation

2—7300 c.f.m. Roots-Connersville Blowers
1—Joy Axivane Fan, series 1000
12,000'—24" Vent Pipe, Lock Joint, 14 gauge

For Concreting

2—¾ yard Hackley Pneumatic Concrete Placers
1—Model 190 Rex Pumpcrete Machine
Special Placing Equipment for Arch and Invert

Miscellaneous

25—1½" to 4" Electric Pumps
2—60 K.W. Diesel Generator Sets

Subject to prior sale

FRAZIER-DAVIS CONSTRUCTION COMPANY
1319 Macklind Avenue, St. Louis, Mo. STerling1950
Box 153—Grahamsville, New York Grahamsville 2861

FOR SALE

MARION shovel 5 yd., rental purchase
BUCYRUS-ERIE model 7W dragline 6 yd
BUCYRUS-ERIE model 54-B shovel & drag
BUCYRUS-ERIE model 38-B shovel & drag
NORTHWEST model 6 shovel & drag
NORTHWEST model 80-D shovel
NORTHWEST model 95 dragline
MANITOWOC model 4500 dragline 5 yd
EUCLID REAR DUMP TRUCKS 15 & 22 ton

Write FS-6668, Engineering News-Record
330 W. 42nd St., New York 36, N. Y.

PILING

FOR SALE
New Wire Rope Blocks

12" Snatch Blocks with Hooks.....$13.50
14" Snatch Blocks with Hooks..... 18.50
16" Safety Snatch Blocks with Shackles 20.00
14" Double Blocks with Shackles..... 13.00
18" Single 20 Ton with S. Shackle..... 25.00
18" 3-Sheave 30 Ton with Shackle..... 50.00
18" 4-Sheave 30 Ton with Shackle..... 75.00
#32 Drop Forge Hooks, New..... 2.00

ABERTHAW COMPANY
133 Southampton St. Boston 18, Mass.

28 SURPLUS NEW BELT CONVEYORS

30 INCH	1-136' - 1-270' - 2-500' - 1-1100' &	- 2-350' - 2-1500'	- 1-418' Long.	
36 INCH	1-160' - 2-250 - 1-590' - 2-1000'	- 1-320' - 1-1600'	- 1-400' Long.	
42 INCH	1-144' - 1-290' - 2-700' - 1-800'	- 1-377' - 2-1500'	- 1-575' Long.	

DARIEN, 60 E. 42nd St., N.Y. 17, N.Y.

FOR SALE OR RENT

Rebuilt and in A1 Condition

Cat. D7 Bulldozer #4T5988
Cat. D7 Bulldozer #4T6542
Cat. D8 Tractor #8R8926
Cat. D8 Tractor #8R8933

WILLIAMS CONSTRUCTION CO.
Middle River, Maryland Phone: Essex 1310

FOR SALE

3—Euclid End Dumps, Model 2FD
1—D8 Cat. Angle Dozer, 2 PCU. S/N 2U7054
1—500 CFM Cat Power Portable LeRoi Compressor
1—500 CFM Cat Power Portable C. P. Compressor
1—500 CFM Cat Power Portable Worthington Compressor
1—315 CFM Herc Diesel Portable Sullivan Compressor
1—500 CFM V-Type Electrical Stationary Compressor
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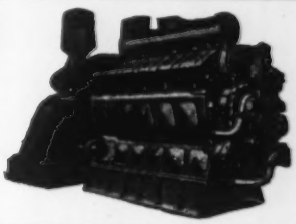

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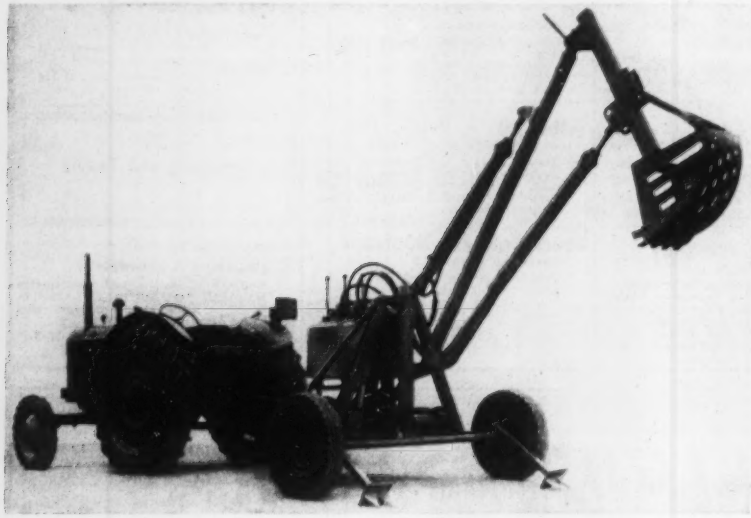


Tractor can haul hydraulic pullshovel

British firm develops portable machine that fills the gap between hand labor and crawler-mounted rigs

The Allen Tractor-Operated Shovel (called the ATOS) hooks on to the drawbar of a medium sized farm tractor or any other suitable tractor. This new piece of equipment receives power from the tractor takeoff which actuates the hydraulic pumps that work the machine.

The tractor-drawn shovel can readily be moved around from job to job with little or no trouble.

Weighing approximately 2,500 lb, the ATOS can cut trenches in materials up to and including hard clay. It's interchangeable as a shovel or trench hoe for loading as well as digging. Several bucket widths, from 18 to 24 in. are usable. Outriggers are usually needed when the 24-incher is used.

There are three controls, all hydraulic, which simplify operation. One actuates the bucket; another, the boom; and the third, swing travel in either direction. By-pass valves cut off hydraulic power before undue strain can cause damage.

This feature is particularly helpful when unseen underground obstructions are encountered.

Overall length is 18 ft; width, 7 ft 11 in.; height (with lowered boom), 5 ft 9 in. Tires are 7.50 x 16 and hydraulic reservoir capacity is 25 gallons.

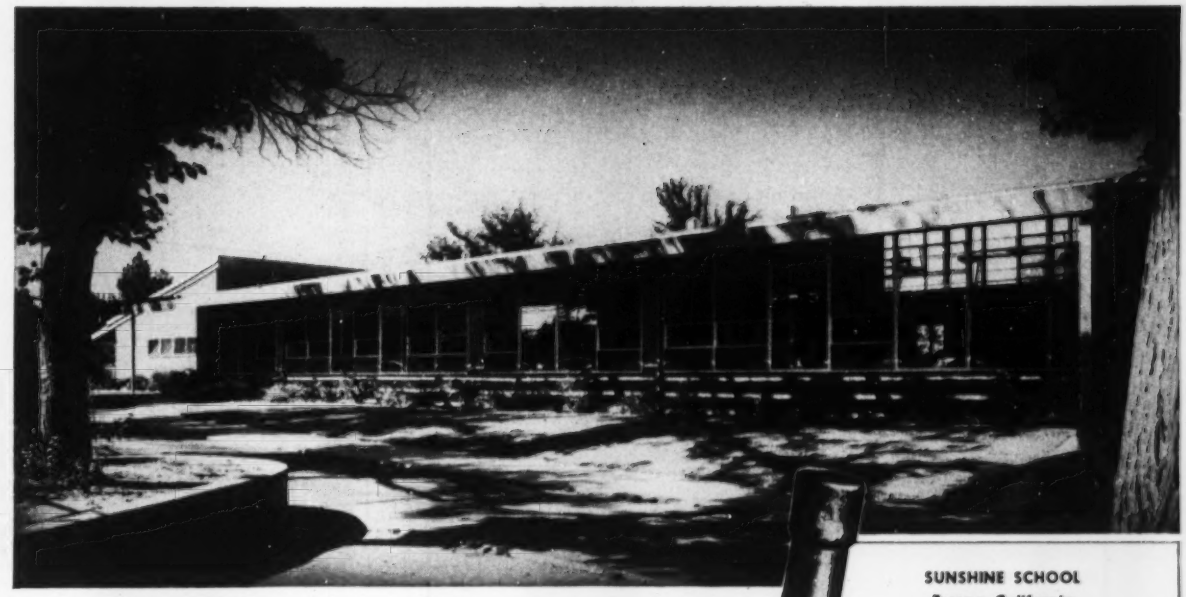
Hydraulic pressure for the boom and bucket cylinders is 1,000 psi; for swing rams, 750 psi. The boom is 4½ in. in diameter and its maximum loading height is 12 ft 9 in.; maximum cutting depth, 8 ft 6 in. JOHN ALLEN & SONS (OXFORD) LTD., COWLEY, OXFORD, ENGLAND.

Mobile hydraulic lift takes 6,000 lb up 38 feet

Although it's shown here raised to its full height of 38 ft and is supporting only one man, the Hamlin-Klock lift can retract to a 13½-ft clearance height and can support 6,000 lb.

The manufacturer further states its 8-ft platform can be rotated through 360 deg. controllable from aloft and is recommended not only for lifting men and materials to overhead work,

LOAMY SOIL like that pictured here presents a severe test for big tires, but B. F. Goodrich Co's new "Earth-Movers" don't seem to be affected much by it. The new tires are 65-inchers, all nylon, with wide base and 18 ply. Under test for the last two years by R. G. LeTourneau Inc. at two of their proving grounds, they operate at pressures from 20 to 25 psi. Since this is unusually low pressure for heavy equipment tires, a specially designed tapered bead seat prevents rim slippage. According to the manufacturer, the shallow type tread, instead of digging in and bogging down, keeps rolling because of its high flotation.—B. F. Goodrich Co., Akron, Ohio.



SUNSHINE SCHOOL
Fresno, California

ARCHITECTS—David H. Horn—Fresno, Calif.
M.D. Mortland, Fresno, California
ASSOCIATE ARCHITECTS—C. C. Ternstrom
Los Angeles, California
MECHANICAL ENGINEER—Gordon S. Stiles
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This same care and planning was extended to the heating system. Even, controlled warmth was a "must." The designers answered the need with a radiant heating system. To safeguard the heating system from the health and economic threat of premature failure, Byers Wrought Iron pipe was used for the heating coils.

Protecting radiant heating systems in schools with Byers Wrought Iron pipe is a continuing practice with David H. Horn & M. D. Mortland, architects for famous Sunshine School. Since the introduction of radiant heating, this architect team has employed the system, using Byers Wrought Iron pipe, in fifty schools in the California area.

There are good reasons for this confidence, which is shared by an increasing number of the nation's leading architects. Byers Wrought Iron pipe is readily formed and welded which speeds and simplifies radiant heating installation. It has a high rate of heat emission. It expands and contracts at practically identical rates with concrete. Its mechanical strength withstands damage during installation. And its corrosion resistance has been demonstrated time and time again, over periods of many years.

Our bulletin, BYERS WROUGHT IRON FOR RADIANT HEATING, gives the complete story. Write for your copy.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, San Francisco. Export Division: New York, N.Y.

Why Genuine Wrought Iron Lasts

This notch-fracture test specimen illustrates the unique fibrous structure of genuine wrought iron—which is responsible for the high corrosion resistance of the material. Tiny threads of glass-like silicate slag, distributed through the body of high-purity iron, halt and disperse corrosive attack, and discourage pitting and penetration. They also anchor the initial protective scale, which shields the underlying metal.

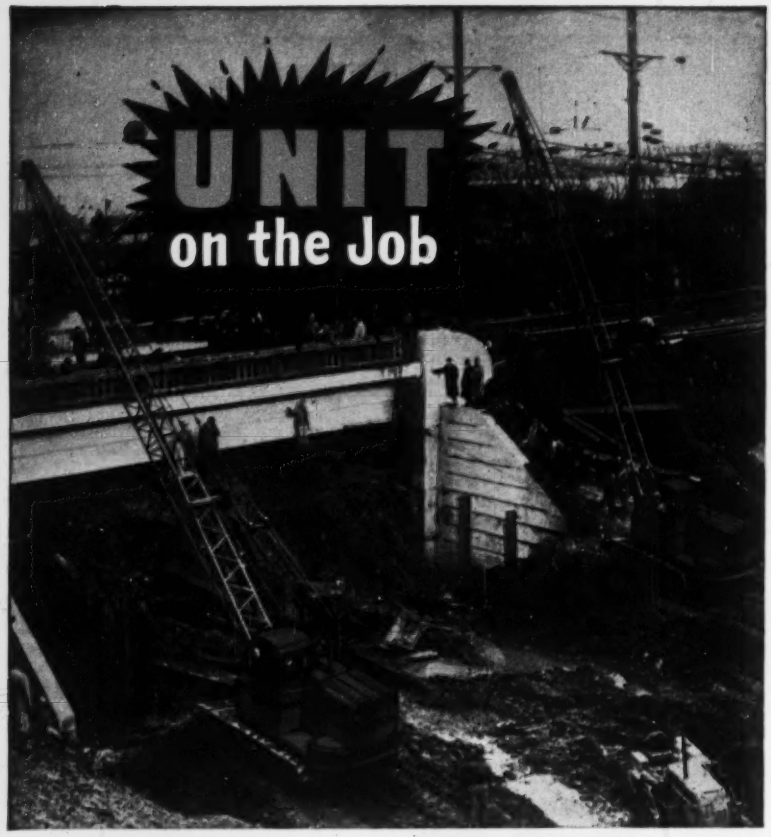
BYERS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

WROUGHT IRON

TUBULAR AND HOT ROLLED PRODUCTS

ELECTRIC FURNACE QUALITY ALLOY AND STAINLESS STEEL PRODUCTS



TEAMWORK and Accurate Control

Working as a team, these two UNIT 1020 Cranes moved a 500 TON railroad bridge from its temporary mounting to the new structure in a period of thirteen (13) minutes. This type of job calls for smooth and accurate control of boom and hoist line operation. UNIT'S extra long crawlers, multiple-hinged shoes, wide axles, and hook rollers provide perfect balance and stability. This, together with the FULL VISION CAB for complete visibility, makes UNIT the machine that is dependable and safe to handle efficiently any type of heavy-duty work.

SEE FOR YOURSELF: *Let us send you our novel TV Brochure. It illustrates the complete UNIT line.*

UNIT CRANE & SHOVEL CORPORATION
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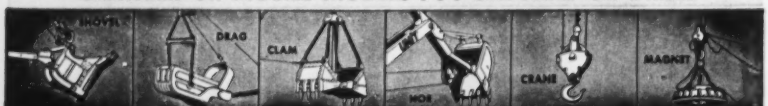
½ or ¾ YARD EXCAVATORS...CRANES UP TO 20 TONS CAPACITY
CRAWLER OR MOBILE MODELS . . . GASOLINE OR DIESEL



All Models Convertible to ALL Attachments!

A 7186-2/3-C

NEW PRODUCTS

(Continued from page 96)
but for placing trusses, tank tops, pipe sections, etc.

Built on a heavy, pneumatic-tired trailer, the lift is powered by a 7½-hp Wisconsin engine that drives the telescoping hydraulic columns. The base has four stabilizing screw jacks on folding arms. These are brought into play for high lifts or heavy loads.

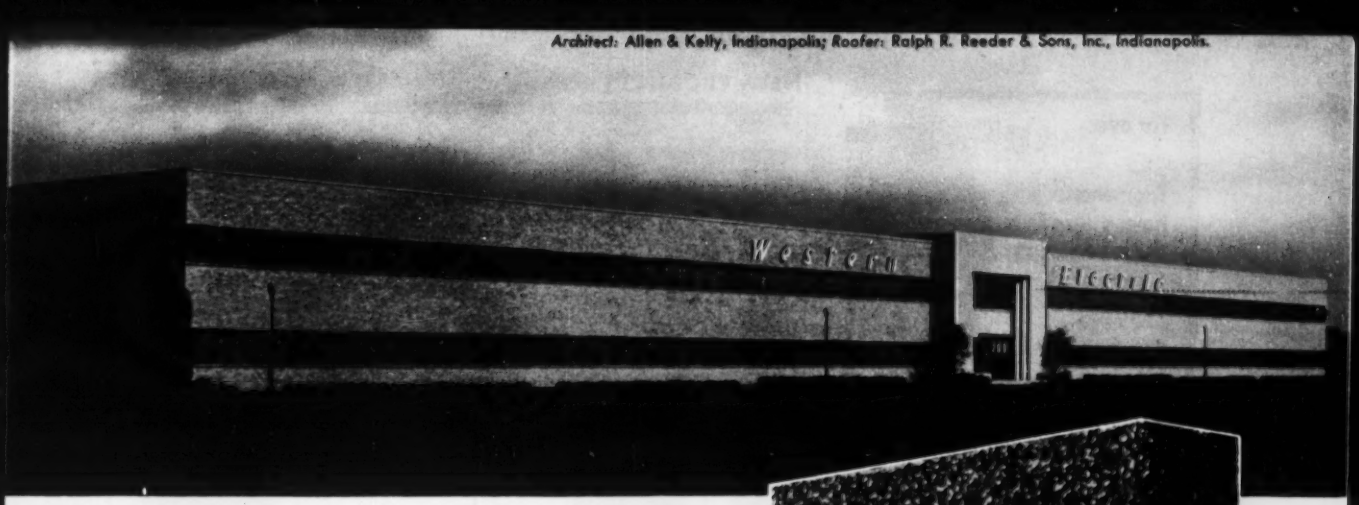
Safety features include controlled slow rate of descent even with complete rupture of a hydraulic line. In event of a control failure, a by-pass valve facilitates lowering. A 6-in-high kickboard around the base of the platform prevents tools or materials from falling and chest-high guard rails protect workmen from falls. Hydraulic stabilizing jacks are optional. HAMLIN-KLOCK CORP., 28 N. MARENGO AVE., PASADENA 1, CALIF.

Machine throws snow 30 ft. cuts path 24 in. wide

The Sno Mate is a snow removal machine that comes in two models: self-propelled or push type. It has been designed to remove any type of snow under any snow condition, according to the manufacturer.

It will cut a clean path 24 in. wide and an adjustable chute tip regulates the distance snow is thrown—up to 30 ft. The unit is powered by a 2.5-hp engine, laboratory-tested to start and operate efficiently under arctic conditions.

The push type, Model 24S, can be changed to a self-propelled type (Model 24SP) at any time. TRI D ENGINEERING & MANUFACTURING, ROCK ISLAND, ILLINOIS.



Architect: Allen & Kelly, Indianapolis; *Roofer:* Ralph R. Reeder & Sons, Inc., Indianapolis.

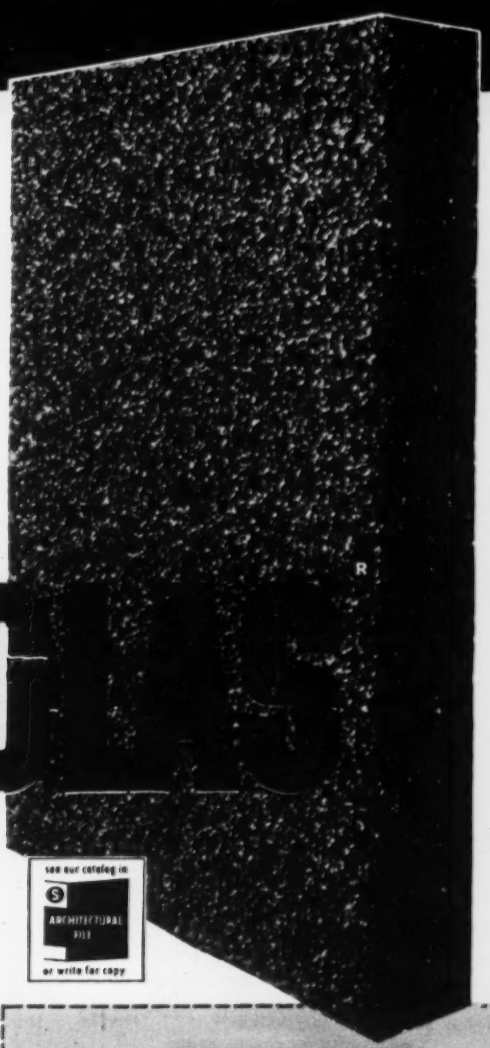
How *Western Electric* added overhead and saved money

Impossible? Not at all, for Western Electric Company is finding *that* a very profitable formula at their new Indianapolis telephone plant . . . the world's largest. By *adding* FOAMGLAS insulation *overhead* (on their 20 acre roof), they are *saving money* over and over.

The use of increasingly popular steel deck construction had made insulation on the roof mandatory. *Architect J. Lloyd Allen* reports, "The selection of

J. Lloyd Allen

FOAMG



insulation for this roof not only cut heating and comfort conditioning costs immeasurably, but has given Western Electric the added advantage of constant insulation efficiency. Only FOAMGLAS has sealed glass cells that are impervious to the moisture that causes ordinary insulations to lose much of their effectiveness."

It will pay you also, to specify FOAMGLAS, the *Stay-Dry* insulation for *your* insulation . . . for normal temperature buildings, refrigerated structures or piping and equipment. Please use the coupon so we can send you a free sample and further information.

PITTSBURGH CORNING CORPORATION
PITTSBURGH 22, PA.

Pittsburgh Corning Corporation, Dept. D-25
Pittsburgh 22, Pa.

Please send me free sample and booklets on use of FOAMGLAS for:

- ☐ Normal Temperature Buildings
- ☐ Refrigerated Structures
- ☐ Piping and Equipment

- ☐ Send engineer to help with specific problem
- ☐ Advise nearest source of supply

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____

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50 YEARS
Engineers
Have Utilized
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& counsel of
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GRATING CO.

Over 50 years ago Walter Irving founded what is now the Irving Subway Grating Co. Shortly thereafter he conceived the idea of Open Steel Flooring and a new industry was born. Since that time experience has taught us a lot about grating, its use and its properties. We will be happy to share this experience and know-how.

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DURING
1 day
A B-G RUNABOUT DITCHER
covered **53** miles
while digging

2320 feet
of 5½" x 36" trench
see your B-G distributor or write
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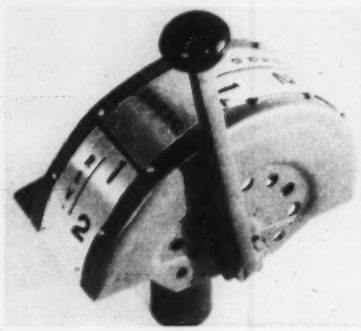
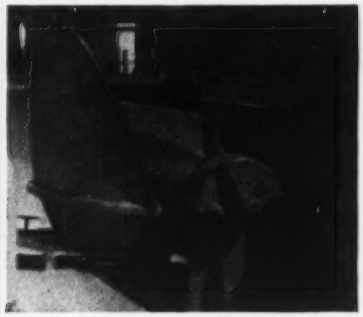




LeTourneau produces new shifting device

Quadrant lever eliminates gear clashing on all rigs equipped with Tournamatic transmissions

A completely new type of shifting mechanism is now standard equipment on the A and C Tournamatic Tournapulls and the Super C Tournadozer.

The device, pictured above, consists of a quadrant lever for selecting speeds in a logical sequence, both forward and reverse.

Positioned right next to the operator's right leg, it's extremely easy to operate and permits him to wear gloves without any difficulty in shifting.

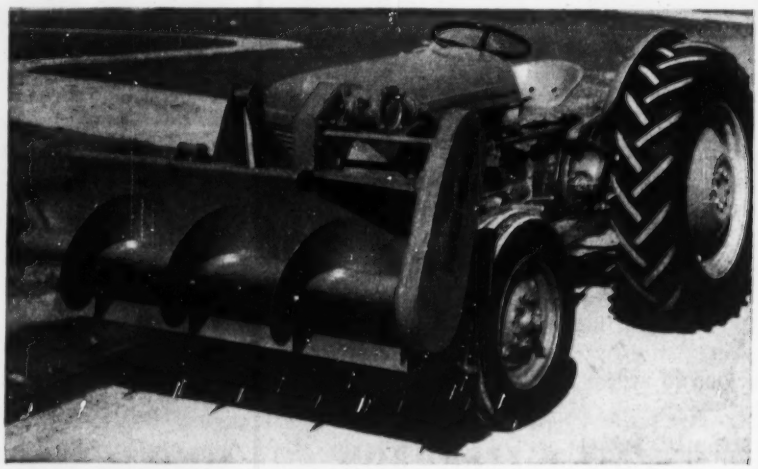
Speeds are clearly indicated on an aluminum plate with forward speeds up front and reverse speeds in back. Tournaticker switches in the mechanism and actuate solenoids to engage or disengage the various clutches in the Tournamatic transmission. Users claim that the device makes the breaking-in of a new operator a lot easier. A light pause is permitted between gear shifts, eliminating the frequency of shock loads. In addition, the possibility of getting into two or more gears at the same time has been eliminated. R. G. LeTourneau Inc., Peoria, Illinois.

Light-weight roller designed for patching, landscaping

Rollpac is the name of a new lightweight power roller designed for highways and street patching, black top paving of parks and playgrounds and for use by landscapers or school and college departments.

Its features include all-steel con-

(*Continued on page 103*)



AN AUGER ATTACHMENT for handling snow, gravel and other loose materials has been added to the Shawnee line. Called the Cyclone, the side delivery auger attached to a dozer blade. It's powered by direct drive from the power takeoff and can be installed or removed from a Ford or Ferguson tractor in a matter of minutes. Power line is equipped throughout with self-aligning sealed ball bearings.—Shawnee Manufacturing Co. Inc., 1947 N. Topeka, Topeka, Kansas

7,000 fasteners set in concrete in 3,500 minutes

Saved $15,000 on 50,000 fastenings into steel

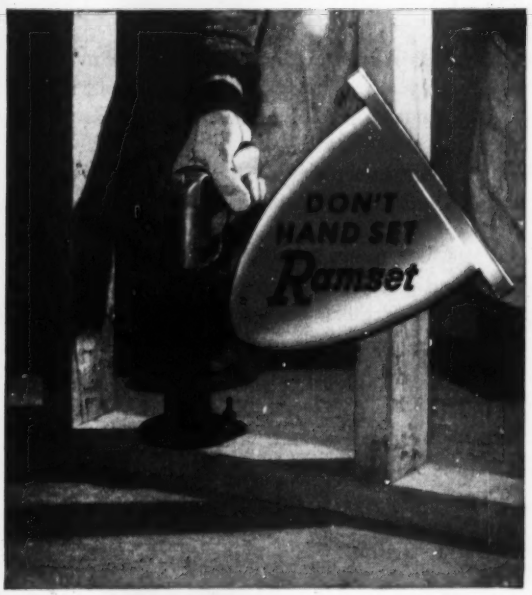
Fastener cost reduced from $2.53 to 24 cents

Cut fastening time from 9 minutes to 58 seconds

Lowered fastening cost 87%; reduced time 90%

Split-second fastening into steel or concrete with super-speed *Ramset Jobmaster*

FASTENING SYSTEM



Just as thousands of users have been saving for six years, you can slash cost and time of fastening into steel or concrete with RAMSET SYSTEM, pioneer in powder-actuated fastening.

Let us prove, on your own work, how the ten big features of the new RAMSET JOBMASTER add up to new speed, new economy, new ease, new utility. See the lightning-fast action—one-hand operation—accuracy of positioning—straight, firm penetration which only the JOBMASTER gives you.

Ask your dealer to do a sample job for you, and prove the dollars-and-cents value of doing every fastening job with RAMSET.

Always use Tru-Set Fasteners

Exclusive Red-Tip Pilot guides them straight to the work, with highest efficiency in performance. Four types in 56 sizes for split-second fastening into steel or concrete.

* Names of these RAMSET users and others in your locality available on request.

Ramset Fasteners, INC.

Ramset Division, Olin Industries, Inc.

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THE BIG BOSS behind the huge mahogany, the medium-sized boss pushing a fleet of bull-dozers, the would-be boss up in the ironwork, and the little bosses all over the country – they face a load of problems other than how to push a slide rule or drive a rivet.

"What's the union going to do?", "What's the best way to finance new equipment?", "What do I have to report to Washington?", "What do bricks cost in Boston?" – these are just as important to the boss today as "How much stress will that girder take?"

The busy boss in building today needs fast, concise, lucid coverage of all the forces and factors that make construction tick. Engineering News-Record is the *only* publication that supplies it to him – all in one package, every week. That's why you'll find bosses of all sizes and shapes and titles reading it.

And remember, many bosses have a finger in every construction purchase. Engineering News-Record reaches more of these bosses who select, specify and buy than any other advertising medium.

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it takes many bosses to make one purchase

ENGINEERING
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A McGRAW-HILL PUBLICATION, 330 WEST 42nd STREET, NEW YORK 36, N. Y.

struction, formed steel channels and plates, Briggs & Stratton 5-hp engine with a twin-disc clutch and Toro planetary transmission.

Forward and reverse operations are controlled by a single lever which is pushed in the direction of travel desired. Hollow rolls are of ⅜-in. plate and weight is adjustable from 720 lb to 1725 lb. SOILAIRE INDUSTRIES 1200 SECOND AVENUE SOUTH, MINNEAPOLIS 3, MINNESOTA.

Steel structural sections replace wood studs, joists

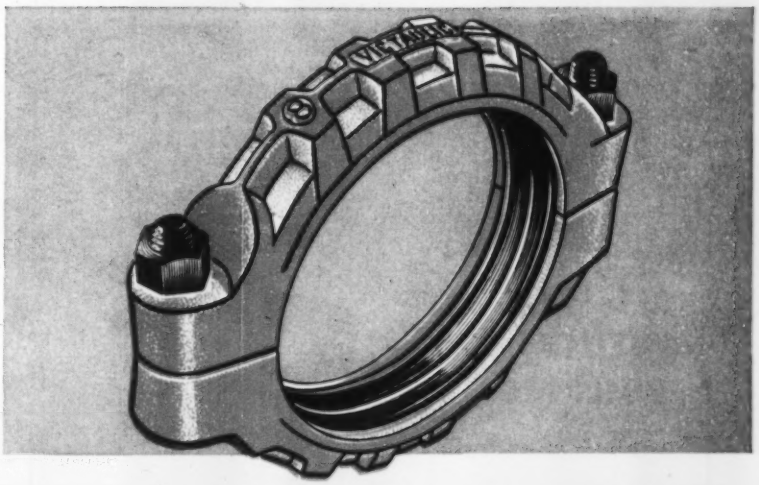
Steel framing has always been associated with heavy construction just as wood framing and studding is associated with lighter buildings. Penn Metal Company now has available a new line of steel structural sections identified by the trademark LIGHT-STEEL, and recommended for single and multiple residences, schools, industrial and commercial structures.

The sections include a complete range of studs, joists and accessories for the erection of steel building frameworks. Fabricated from strip steel by cold rolling, the sections are distinguished by a double truss, open web design that gives them the advantage of light weight without sacrificing strength.

Single studs or joists are in the shape of a channel; welded back to back to form a double stud, they resemble an I-beam in cross-section. In addition to these two basic types, the company makes structural track and bridging that's similar in appearance. These track sections are slightly oversize so that they fit around the standard sections; bridging is slightly undersize to fit inside the flanges on standard sections.

Track and bridging are used as top and bottom plates, bracing, sills, etc.

(Continued on page 104)



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VICTAULIC COUPLINGS FOR LOCK-TIGHT LEAK-PROOF CONNECTIONS AT EVERY JOINT UNDER PRESSURE, STRAIN OR VACUUM, ARE ONLY PART OF THE COMPLETE, MODERN VICTAULIC 4-STAR METHOD OF PIPING. YOU ARE ASSURED FAST, EFFICIENT, STREAMLINED CONSTRUCTION THAT SAVES $$$$ WITH: VICTAULIC FULL-FLOW TEES ELBOWS AND ALL TYPES OF FITTINGS ALL WIDELY ADAPTABLE AND EASY-TO INSTALL; *PLUS* CONVENIENT, PORTABLE VIC-GROOVER TOOLS FOR GROOVING STANDARD PIPE ENDS WITH SPEED AND EASE; *AND* QUICK, HANDY ROUST-A-BOUT COUPLINGS FOR PLAIN END PIPE AND ALL-AROUND VERSATILITY! MAKE SURE YOUR NEXT JOB IS ALL VICTAULIC! PROMPT AVAILABILITY FROM LOCAL DISTRIBUTOR STOCKS COAST-TO-COAST.

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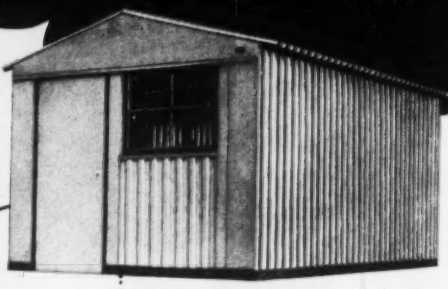
PORTABLE
HANDY-HUT

ALL-STEEL UTILITY BUILDING



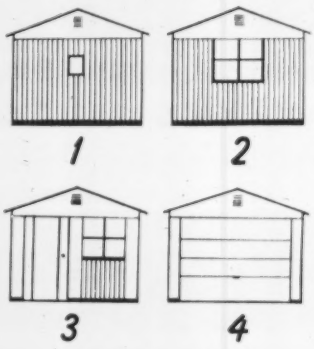
✓ 10' x 12' to 10' x 20'
✓ ½ DAY TO ERECT
✓ FULLY SALVAGEABLE WHEN DISMANTLED

Here's a portable or permanent small, all-steel building that is delivered ready to erect. No cutting, fitting, riveting or welding needed. Full 7½ ft. headroom and any length from 12 ft. to 20 ft. in 2 ft. multiples. Bolted frame and clip and wedge sheet attachments permit easy dismantling. Choose from *four types* of rear panels to suit your needs.

RECOMMENDED USES

Contractor's Office • Storage House
Tool House • Work Shop • Pump House
Watchman's Shelter • Field Office
Railway or Highway Maintenance Shed

4 STYLES
of rear wall panels can be chosen to suit your needs.



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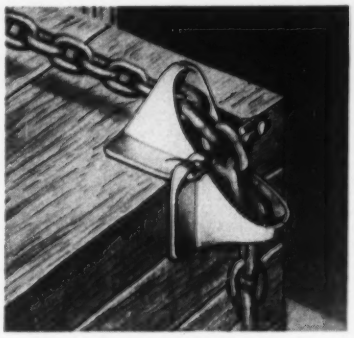
WOOSTER, OHIO
PRODUCTS Hollow Metal Doors • Prefabricated Metal Buildings • Window Wells
Highway Guard Rail • Bridge Flooring • Corrugated Metal Pipe

"Gunite" ..... the sand-cement product of the "CEMENT GUN," for Concrete and Masonry Repairs, Pre-Stressed Tanks, Steel Encasement and for lining Reservoirs, Sewers and Tunnels.

CEMENT GUN COMPANY
"GUNITE" CONTRACTORS
GENERAL OFFICES—ALLENTOWN, PENNA., U.S.A.
MANUFACTURERS OF THE "CEMENT GUN"

and permit even welding with upright studs.

The open web simplifies passage of wiring and piping through the punched web design and workmen can quickly fasten wires or clips directly to them for tying in metal lath, wall board or other surfacing materials being used. PENN METAL CO., INC., 205 E. 42ND STREET, NEW YORK 17, NEW YORK.



Hinged protectors prevent damage to loads in transit

The two pieces of the load protector shown here hinge together to make a unit that will accept chain, wire rope or cable and will swing from 90 to 180 degrees.

They have been tested on moving loads of pipe, tubing, lumber, crating and have aided in protective unloading as well. Cable or chain up to and including ¼ in. may be used and if a grabhook is already secured to a chain, it can be threaded through the unit. The two pieces may be separated and used singly if desired. CANTON MANUFACTURING CO., 2408 13TH ST., N. E., CANTON, OHIO.

New Product Briefs

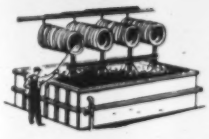
Most space heaters have electric-driven blowers and therefore can be used only where electricity is available. A new type made by **Quiet Automatic Oil Burner Corp., 33 Bloomfield Ave., Newark, N. J.** has a small gasoline engine to do the job on 200,000- and 400,000-Btu sizes.

The Stanley Handyman Builder's Kit (H 23) is a **compact kit for hanging doors.** It includes a basic H39 ⅜-hp motor, router base, plane attachment and new T-47 door and jamb butt templet. Everything fits neatly into a sturdy and practical metal carrying case. **Stanley Electric Tools, New Britain, Conn.**

For PROTECTION that fits the Job!

Specify PITT CHEM TAR BASE COATINGS

PITT CHEM 101

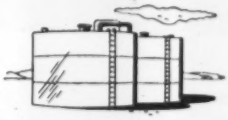


A heavy-film coating for protection of metal, masonry, stone and brick against very corrosive vapors, acid and alkali spillage and extreme moisture conditions.

PITT CHEM 102

A thin, high gloss maintenance coating to protect metal and concrete surfaces against normal atmospheric corrosion, mildly corrosive vapors and moisture.

PITT CHEM 103

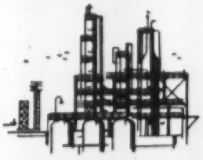


A heavy duty general maintenance coating for moderately severe corrosive conditions like dilute mineral acids, alkalies, sewage, moisture and corrosive vapors.

PITT CHEM 104

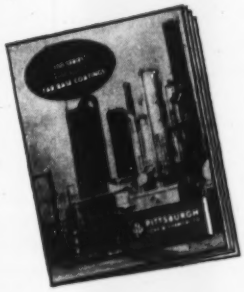
Specifically formulated to protect potable water tanks and water transmission equipment. Dries very quickly and imparts no taste or odor to potable water.

PITT CHEM 105



An irreversible, fast drying coal tar emulsion which provides excellent corrosion resistance on metal, concrete, brick and stone.

W&D 4430



Write For FREE Corrosion Control Booklet

Tells where tar base coatings can save you money in your plant ... what grades to use ... how to apply them.

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DUO-WAY SCOOP. With a one-yard scoop on one end and a dozer on the other, Duo-Way Scoop makes money for you coming and going. It hoists, loads, shovels, back-fills, dozes. With quickly installed attachments it is a lift truck, a mobile crane or a concrete pourer.

Duo-Way Scoop has power steering, four speeds forward and four-speed reverse, planetary drive, full visibility in all directions. Dumping height with track extensions up to 26 feet. Dozer blade is hydraulically controlled, with adjustable angle.

SCOOPMOBILE. Here is the work-proved material mover that scoops, lifts, transports and dumps fast and economically. Foolproof construction . . . maneuvers nimbly . . . scooping capacity ¾ yard, discharges at 7 feet 9 inches with standard track.

Quick change attachments for concrete hopper, lift fork, crane boom, track extension to 26 feet. Road speed to 20 m.p.h. under its own power or can be towed from job to job.

ASK FOR LITERATURE. For detailed information on dimensions, weight, turning radius, mechanical construction, etc., ask us for literature on the Duo-Way Scoop and Scoopmobile. Write us today and the literature will reach you promptly.

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PUBLICATIONS

51 Series Link Belt Speeders—The 51 Series shovel-crane manufactured by Link-Belt is available in three mountings. On crawlers it's known as the LS-51; truck-mounted, the HC-51; and wheel-mounted, the MS-51. A 4-color, 24-page catalog describes all three types with profuse illustrations, components, cutaway views and job applications. The ½-yd machine has regular "Speed-O-Matic" controls, and charts in the catalog illustrate the company's claim that this power-driven hydraulic control system can boost production by as much as 25 per cent. Full convertibility is pointed out, including use as a shovel, dragline, clamshell, crane, trench hoe and pile driver. Other features described and well illustrated are such operating advantages as independent rapid boom hoist and independent swing and travel—LINK-BELT SPEEDER CORP., 307 N. MICHIGAN AVE., CHICAGO, ILL.

Multiple V-Belts—Thermoid's new 8-page catalog on multiple V-belts has a set of conversion tables whereby a user can determine which of the company's belts match those of several other manufacturers. Dimensions, weights, construction details are included in the catalog, as well as complete information on endless type V-belts with metal fasteners.—THERMOID COMPANY, TRENTON, N. J.

Acetylene cylinders—A detailed analysis of welded and seamless acetylene cylinders has been issued by the Coyne Sales Co. Available in bulletin form, the analysis provides concise descriptions of cylinder caps, valves, safety devices, etc., along with numerous photographs and technical drawings. Shipping weights, sizes and water and acetylene capacities are included—COYNE SALES CO., 200 PAUL AVE., SAN FRANCISCO 24, CALIF.

Industrial disc brakes—The basic principles of Goodyear's single disc "airplane type" brake are being applied to varied and difficult industrial braking problems. In this 8-page brochure one typical installation is that on a high-speed band saw which has two type I brakes, with floating disc and fixed housing. If the saw blade breaks, the saw's hydraulic system stops the machine smoothly and quickly. Numerous other applications and Types II and III brakes are described.—THE GOODYEAR TIRE AND RUBBER CO., INC., INDUSTRIAL BRAKE DEPT., AKRON 16, OHIO.

PUBLICATIONS

Rolling Doors—There are nine major requirements in choosing rolling doors, according to this 32-pager, and the booklet describes how Kinnear doors meet them all. They include easy operation, space saving, durability, fire and general protection, safety, appearance, economical installation and guaranteed future maintenance and replacement service. Thoroughly explained is the extra Kinnear safety device which brings the descending door to an immediate stop and reverse if it should come into contact with some obstruction higher than the sill. Thus neither a vehicle nor workman could be injured by a descending door. Sizes range from compartment doors on mobile units to some steam plant installations where doors are five stories high.—THE KINNEAR MFG. CO., COLUMBUS, OHIO.

Lift trucks—Comparison charts—Two new comparison charts covering both walkie and riding type of electric lift trucks are available from Lewis-Shepard. They cover both high lift and low lift models and enable a potential buyer or current user to check off items and make an objective point-by-point comparative analysis of other makes with their products. As well as weight and dimensions, brakes and speeds, gear data and aisle requirements, there are questions on power circuits, safety controls, service representation, etc.—LEWIS-SHEPHARD, DEPT. R-1, WATERTOWN, MASS.

Grading Profits is the title of an 8-page booklet by Caterpillar that contains 22 illustrations ranging from action shots to detailed cutaways of transmissions and control mechanisms. Advantages covered are: Long Life of Cat engines, positive starting, 6-speed transmission, heavy circle construction, range of blade positions, visibility and blade control. Ask for Form 3095 from any Cat distributor or from CATERPILLAR TRACTOR CO., PEORIA, ILL.

Pillow Blocks—Dodge Manufacturing Corp.'s bulletin A-620 tells all about Dodge-Timken Pillow Blocks, explaining their high load-carrying capacity, compactness and ruggedness. The new line of pillow blocks is the result of pooling of engineering resources and bearing building experience of Dodge and Timken Roller Bearing Co. (ENR Jan 1 '53, p 74). One page contains a table on radial load ratings for all sizes from 2⅛ through 10 in. DODGE MANUFACTURING CORP., MISHAWAKA, INDIANA.

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EDITORIALS

Good start

WE LIKE THE WAY in which Douglas McKay, the new Secretary of the Interior, made his first official act after confirmation, the statement of his principles and philosophy on the controversial issue of public power. We also like the principles and the philosophy, as will be clear from reading the editorial on this page last week. "Private enterprise and public ownership can work hand in hand," he said. And he declared that the preference which the law gives public agencies in times of power shortage should not be allowed to work hardship on the private power user. Government "for all the people," as proclaimed by President Eisenhower, thus gets off to a good start.

Ethics, not law

THE JUDGE in Tennessee who refused to attempt to delineate the fields of practice of engineers and architects (ENR Jan. 15, p. 26) took a reasonable approach to a question that has been a source of petty conflict between architects and engineers ever since the first laws requiring the registration of engineers and architects were passed. Since that time, short-sighted individuals in each profression—but chiefly among architects—have tried to use those laws as a means for reducing competition from members of the other profession.

If the two professions believe that this type of competition is undesirable, the way to end it is to characterize it as unethical and then attempt to eliminate it by disciplinary action within the profession. Attempts to get the courts to end it are bound to fail.

In the action in Tennessee, the joint board for registration of both engineers and architects undertook to force a builder, registered as an engineer, to stop designing the houses he builds on the ground that such designing constitutes the practice of architecture. The basis for the action was that the builder was not a licensed architect.

The judge said, first, that it is not practicable to attempt to draw a line between the practice of architecture and that of engineering, observing in this connection that the state legislature apparently agreed as it has grouped the two professions under a single board of registration. He added that the record does not demonstrate that the builder, whose practice was questioned by the board, was engaged in activities that violated any law.

What advocates of segregation of the practice of engineering and architecture overlook is the fact that the interest of the state is limited to those parts of the practice of either profession that affect public safety. In the case at issue it is obvious that the builder, to qualify for his license as an engineer, must know how to design a structure that will be structurally safe. Hence the state has no power to step in and say he cannot build the houses because he is not registered as an architect.

Because of this situation, if the two professions believe that interprofessional comity will be advanced by limits on the type of work done by their members, those limits will have to be set by the profession itself on some ethical basis. It should also be pointed out, however, that making such limits effective will not be easy unless it can be shown rather clearly that someone other than members of the two profressions themselves will benefit.

Speeds and motor accidents

A STEP that should be productive of much valuable information on the relation of vehicle speeds to highway safety has just been taken by the Pennsylvania Turnpike Commission. That commission has ordered a cut in the top speeds of passenger cars on the western half of the turnpike from 70 mph to 60 mph, and has set a top speed of 45 mph for trucks in the same region. Top speeds on the eastern half of the turnpike are to remain unchanged.

The plan will make possible a comparison of accident records on the two halves of the turnpike. This will be much better, statistically, than trying to compare the accident record for the entire turnpike with the record of some similar highway such as the New Jersey Turnpike where top speeds are lower than on the Pennsylvania Turnpike. The two halves of the Pennsylvania Turnpike are not as similar physically as they should be for an ideal comparison, because the western end is through more rugged country, with more curves, grades and tunnels than the eastern end, but ideal conditions for such comparisons seldom are obtainable.

There is substantial evidence indicating that high speeds are a major factor in highway accidents, especially fatal accidents and accidents resulting in a large amount of damage. The study now being undertaken by the Pennsylvania Turnpike Commission will do more than any previous one to support or disprove the validity of that conclusion.

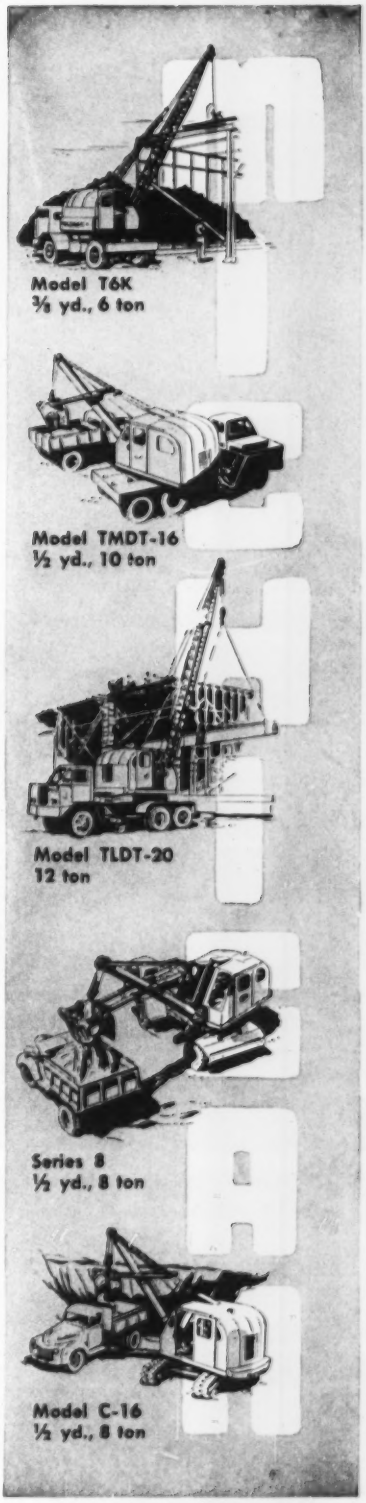
For that reason, advocates of reducing the top speeds on the entire turnpike should not continue to press for such action, as the Association of Casualty & Surety Compaines is now doing. It is no doubt true that lower speeds on the entire turnpike would provide the maximum reduction in serious accidents. Nevertheless, if evidence against high speeds can be produced by showing a sharp drop in accidents on the western low-speed end and no corresponding drop on the east end, the lesson will be more convincing.

Trouble-Free PERFORMANCE

"It's the only machine we've had for any length of time that has had no major repairs." That's what William Wylie, equipment foreman, says about the MICHIGAN ½ yd. Crawler Excavator owned by A. G. Woods Company, Windsor, Connecticut. Yes . . . it's quite a record for an excavator that has been *"worked hard," 10 to 14 hours a day for a year and a half.*

At Woody Crest Housing Development in West Hartford, Connecticut, the MICHIGAN digs service, sewer, water and drainage ditches . . . excavates for septic tanks and basements . . . loads trucks. Digging 450 feet of trench and laying the eight inch pipe is an average day's work.

Service records like this are typical for MICHIGAN Excavator-Cranes. Why settle for less? When you need an excavator-crane . . . investigate MICHIGAN . . . you'll agree it's *your best buy!* Write, wire or phone for complete details.



MICHIGAN POWER SHOVEL COMPANY

500 Second Street, Benton Harbor, Michigan, U. S. A.

New General shovel switched to TIMKEN® bearings for longer life, less maintenance

BY switching to Timken® tapered roller bearings for its new, improved ¾-yard shovel, General Excavator Company solved two big problems—how to get longer bearing life and reduce maintenance. A total of 17 Timken bearings are used on the power takeoff, vertical swing shaft, boom hoist worm shaft, hoist drum and hook roller.

Timken bearings are rugged. Because of line contact between rollers and races, they have extra load-carrying capacity. And because the rollers and races are case-hardened, their surfaces resist wear, their cores resist shock. They're made of Timken fine alloy steel.

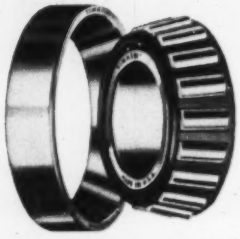
The tapered construction of Timken bearings permits them to carry heavy radial, thrust and combination loads. Proper shaft alignment and smooth, accurate gear mesh are assured. There's less gear wear, no shaft wear.

Timken bearings hold shafts and housings concentric, making closures more effective. Lubricant stays in—dirt and moisture stay out. Damage to brake and clutch drums by leaking lubricant is prevented, maintenance and lubricant costs reduced. In addition, Timken bearings practically eliminate friction. That's because they have true rolling motion and an incredibly smooth surface finish.

To get all these advantages for the construction equipment you build or buy, be sure to specify Timken bearings. And look for the trade-mark "Timken" stamped on every bearing. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

This symbol on a product means its bearings are the best.

GENERAL EXCAVATOR COMPANY uses a total of 17 Timken tapered roller bearings in its new ¾-yard shovel. Timken bearings are used in the power takeoff, vertical swing shaft, boom hoist worm shaft, hoist drum and hook roller.



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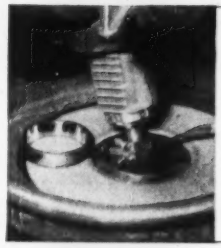

FINISHED TO CLOSER TOLERANCES

Finishing to incredible smoothness accounts for much of the precise, smooth rolling performance of Timken bearings. This honing operation is typical of the amazingly accurate manufacturing methods at the Timken Company.

The Timken Company is the acknowledged leader in: 1. advanced design; 2. precision manufacturing; 3. rigid quality control; 4. special analysis steels.

NOT JUST A BALL ○ NOT JUST A ROLLER ⊂⊃ THE TIMKEN TAPERED ROLLER ⊂⊃ BEARING TAKES RADIAL AND THRUST → LOADS OR ANY COMBINATION →